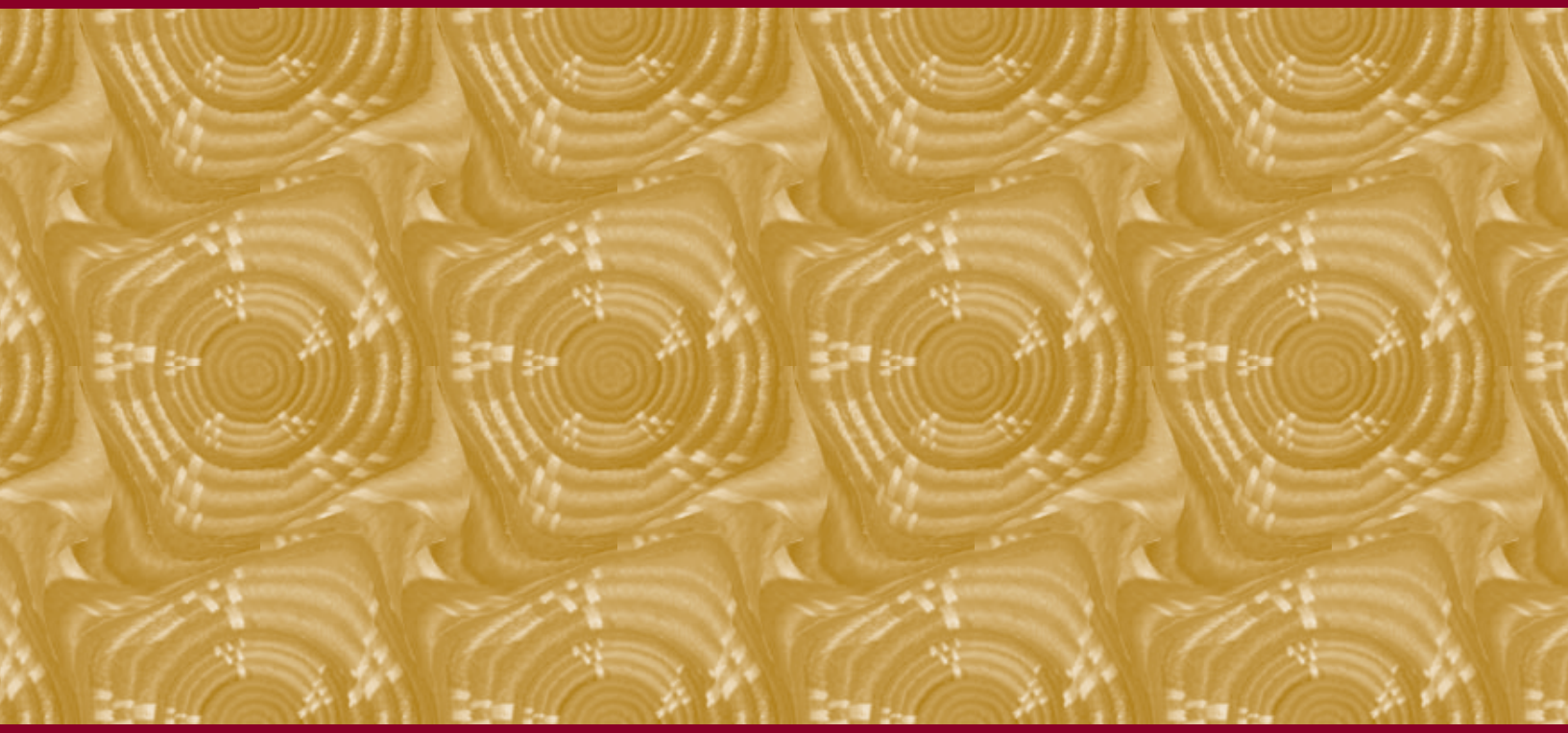
Eritrea



Demographic and Health Survey

2002

World Summit for Children Indicators

World Summit for Children Indicators by zoba, Eritrea 2002

			Zoba					
		Total	Debubawi Keih Bahri	Maekel	Semenawi Keih Bahri	Anseba	Gash-Barka	Debub
Childhood mortality	Infant mortality rate (per 1,000 live births)	48	122	39	77	37	66	58
	Under-five mortality rate (per 1,000 live births)	93	187	60	154	73	123	111
Childhood undernutrition	Percent stunted (children under 5 years)	37.6	37.4	23.0	41.9	40.5	44.8	38.7
	Percent wasted (children under 5 years)	12.6	13.8	6.1	18.0	15.6	16.9	9.8
	Percent underweight (children under 5 years)	39.6	41.1	23.4	51.2	46.7	49.6	34.6
Clean water supply	Percent of households within 15 minutes of safe water supply[1]	67.4	83.7	91.5	62.6	56.3	70.3	51.9
Sanitary excreta disposal	Percent of households with flush toilet, pit toilet/latrine[2]	25.6	56.7	58.4	24.1	19.2	10.3	10.0
Basic education	Proportion entering primary school[3]	14.4	14.4	39.5	9.2	9.5	7.7	9.4
	Net primary school attendance rate[3]	61.2	52.7	87.5	42.7	53.3	40.4	71.1
Children in especially difficult situations	Percent of children who do not live with either biological parent[3]	5.7	6.6	6.6	4.3	5.3	5.4	5.9
	Percent of children with at least one parent dead[3]	9.8	12.0	11.7	9.8	8.1	12.2	8.0
	Percent of children age 10-14 that are working	2.2	9.9	0.8	2.2	1.4	4.3	1.7
Family planning	Contraceptive prevalence rate (any method, currently married women)	8.0	7.1	19.6	5.1	4.4	1.9	7.9
	Contraceptive prevalence rate (any method, all women)	5.8	6.2	10.5	4.0	3.2	1.8	5.7
Antenatal care	Percent of women who received antenatal care from a health professional[4]	70.4	68.0	89.1	74.1	68.6	64.0	62.1
Delivery care	Percent of births in the 5 years preceding the survey attended by a health professional	28.3	41.9	71.9	22.5	15.4	11.0	20.5
Low birth weight	Percent of births in the 5 years preceding the survey at low birth weight[5]	11.3	17.1	9.8	16.4	12.4	7.5	4.8
Iodized salt intake	Percent of households that use iodized salt[6]	68.0	51.0	79.1	48.7	70.2	57.1	75.6
Vitamin A supplements	Percent of children age 6-59 months who received a vitamin A dose in the 6 months preceding the survey	38.0	22.1	51.7	36.0	37.3	32.2	35.8
	Percent of women age 15-49 who received a vitamin A dose in the 2 months after delivery[4]	13.4	10.7	25.8	12.7	12.7	11.4	8.0
Night blindness	Percent of women age 15-49 who suffered from night blindness during pregnancy[4, 7]	11.6	19.2	3.4	11.9	9.9	13.7	15.4
Exclusive breastfeeding	Percent of children under 6 months who are exclusively breastfed	52.0	26.1	55.7	44.9	58.3	48.8	54.4
Continued breastfeeding	Percent of all children age 12-15 months still breastfeeding	91.0	77.3	(85.6)	89.3	90.3	91.6	97.6
	Percent of all children age 20-23 months still breastfeeding	58.0	(28.5)	(58.7)	(54.9)	53.4	(65.2)	60.8

(Continued on inside back cover)

World Summit for Children Indicators (Continued from inside front cover)

			Zoba					
		Total	Debubawi Keih Bahri	Maekel	Semenawi Keih Bahri	Anseba	Gash-Barka	Debub
Timely complementary feeding	Percent of children age 6-9 months receiving breast milk and complementary foods	42.5	28.2	62.5	38.3	39.9	34.4	42.8
Vaccinations	Percent of children whose mothers received at least 2 tetanus toxoid vaccinations[4]	34.6	50.0	40.7	37.1	34.6	32.7	29.3
	Percent of children age 12-23 months with at least 3 DPT vaccinations	82.8	76.5	95.0	78.8	94.8	73.5	75.8
	Percent of children age 12-23 months with at least 3 polio vaccinations	83.3	75.6	91.9	79.8	93.0	75.6	79.0
	Percent of children age 12-23 months with measles vaccination	84.2	70.2	96.1	80.3	93.8	75.7	78.7
	Percent of children age 12-23 months with BCG vaccination	91.4	90.8	97.9	89.1	97.9	87.1	86.8
Diarrhea control	Percent of children with diarrhea in preceding 2 weeks who received ORS or RHF	55.7	47.1	75.8	64.4	51.3	57.7	47.1
Home management of diarrhea	Percent of children age 0-59 months with diarrhea in the past 2 weeks who took more fluids than usual and continued eating somewhat less, the same, or more food	30.4	27.1	41.3	29.4	39.9	42.5	20.1
Treatment of ARI	Percent of children age 0-59 months with acute respiratory infection (ARI) in past 2 weeks who were taken to a health facility or provider	43.6	41.1	61.5	40.3	32.7	57.2	36.0
Malaria control	Percent of children age 0-59 months who slept under an insecticide-treated mosquito net on the previous night[8]	4.2	2.1	0.7	8.1	4.5	3.0	5.4
	Percent of children age 0-59 months with fever in the past 2 weeks who were treated with antimalarial drugs	3.6	0.0	5.8	0.7	4.4	5.6	2.8
HIV/AIDS	Percent of women age 15-49 who correctly state two ways of avoiding HIV infection[9]	51.5	46.3	71.2	29.2	42.4	31.0	61.3
	Percent of women age 15-49 who correctly identify two misconceptions about AIDS[10]	46.3	36.5	72.4	30.8	42.3	24.2	45.9
	Percent of women age 15-49 who believe that AIDS can be transmitted from mother to child during pregnancy, delivery, and breastfeeding	60.2	57.8	63.7	54.1	65.9	44.1	67.7

Note: Figures in parentheses are based on 25-49 unweighted cases.
[1] Piped water or protected well water from covered well or tanker
[2] In household or shared with others
[3] Based on de jure children
[4] For the last live birth in the five years preceding the survey
[5] For children without a reported birth weight, the proportion with low birth weight is assumed to be the same as the proportion with low birth weight in each birth size category among children who have a reported birth weight
[6] 15 parts per million or more
[7] Includes women who report night blindness and difficulty with vision during the day
[8] Mosquito net bought or treated with insecticide within 6 months before the interview
[9] Having sex with only one partner who has no other partners and using a condom every time they have sex
[10] They said that AIDS cannot be transmitted through mosquito bites and that a healthy-looking person can have the AIDS virus

Eritrea
Demographic and Health Survey
2002

National Statistics and Evaluation Office
Asmara, Eritrea

ORC Macro
Calverton, Maryland, USA

May 2003

National Statistics and
Evaluation Office

ORC Macro

This report summarizes the findings of the 2002 Eritrea Demographic and Health Survey (EDHS) carried out by the National Statistics and Evaluation Office. Financial support for the survey was provided by the U.S. Agency for International Development (USAID) and the Ministry of Health through the Technical Assistance and Support Contract (TASC) with John Snow, Inc. ORC Macro provided technical assistance for the survey through the USAID-funded MEASURE *DHS*+ project, which is designed to assist developing countries to collect data on fertility, family planning, and maternal and child health. The opinions expressed herein are those of the authors and do not necessarily reflect the views of the U.S. Agency for International Development.

Additional information about the EDHS may be obtained from the National Statistics and Evaluation Office P.O. Box 5838, Asmara, Eritrea (telephone: 291-1-202940/119507; e-mail: seo12@eol.com.er). Additional information about the MEASURE *DHS*+ project may be obtained by contacting: MEASURE *DHS*+, ORC Macro, 11785 Beltsville Drive, Suite 300, Calverton, MD 20705 (telephone: 301-572-0200; fax: 301-572-0999; e-mail: reports@orcmacro.com; internet: www.measuredhs.com).

Suggested citation:

National Statistics and Evaluation Office (NSEO) [Eritrea] and ORC Macro. 2003. *Eritrea Demographic and Health Survey 2002*. Calverton, Maryland, USA: National Statistics and Evaluation Office and ORC Macro.

CONTENTS

TABLES AND FIGURES

CHAPTER 4 FERTILITY

CHAPTER 5 FERTILITY REGULATION

CHAPTER 9 MATERNAL AND CHILD HEALTH

CHAPTER 10 INFANT FEEDING AND NUTRITIONAL STATUS OF CHILDREN AND WOMEN

CHAPTER 11 HIV/AIDS AND OTHER SEXUALLY TRANSMITTED INFECTIONS

CHAPTER 12 FEMALE CIRCUMCISION

APPENDIX A SAMPLE DESIGN

APPENDIX B SAMPLING ERRORS

APPENDIX C DATA QUALITY TABLES

PREFACE

The 2002 Eritrea Demographic and Health Survey (EDHS) is the second National Demographic and Health Survey (DHS) in the series that started in 1995. The National Statistics and Evaluation Office (NSEO), Office of the President conducted the survey under the aegis of the Ministry of Health (MOH). ORC Macro furnished technical assistance to the survey as part of the MEASURE *DHS+* program, while funding was provided by the U.S Agency for International Development (USAID). The United Nations Population Fund (UNFPA) and the Canada International Development Agency (CIDA) supported the survey by supplying 20 field vehicles. The fieldwork for the 2002 EDHS was carried out between the last week of March and the first week of July 2002.

The major objective of this survey, similar to the first survey, was to collect and analyze data on fertility, mortality, family planning, and health. Compared with the 1995 EDHS, the present survey was expanded in scope to include a malaria module and questions on gender issues. Moreover, geographic coordinates were taken for the selected sample points to allow analysis based on the geographic information system (GIS). Thus, the 2002 EDHS will not only update the information from the 1995 EDHS, but also will provide findings on some new topics of interest.

The findings of the 2002 EDHS presented in this report provide up-to-date and reliable information on a number of key topics of interest to planners, policymakers, program managers, and researchers that will guide the planning, implementation, monitoring, and evaluation of population and health programs in Eritrea. In addition to the estimates at the national level, estimates for key indicators relating to fertility, mortality, and health are provided for all six zobas and for urban and rural areas.

The 2002 EDHS results present evidence of a decline in fertility and early childhood mortality as well as a substantial increase in the level of child immunization coverage since the 1995 EDHS survey. Knowledge of HIV/AIDS remains high in Eritrea. There is, however, still a wide gap between knowledge and use of family planning.

The National Statistics and Evaluation Office (NSEO) acknowledges the efforts of a number of organizations and individuals who contributed immensely to the successful completion of the 2002 EDHS and the timely publication of this report. NSEO is particularly thankful to USAID for funding the survey, to ORC Macro for providing technical assistance, and to UNFPA and CIDA for supporting field vehicles. The office would like to express its gratitude to the Ministry of Health (MOH) for close cooperation in the whole operation and for their significant technical and logistical inputs. The office is grateful for the endeavors of government officials at all levels of administration that supported the survey. High appreciation and commendation go to all the 2002 EDHS field personnel for commitment to high-quality work in difficult working conditions. We acknowledge with gratitude the NSEO staff, who made the survey successful through commitment and a spirit of team work. Last but not least, special gratitude goes to all of the respondents who generously gave their valuable time to provide information that forms the basis of this report

Dr. Georgis Teclemichael
National Statistics and Evaluation Office (Head)
May 2003

SUMMARY OF FINDINGS

The 2002 Eritrea Demographic and Health Survey (2002 EDHS) is a nationally representative sample survey covering 9,389 households and 8,754 women age 15-49.

The survey provides up-to-date information on fertility, early childhood mortality, fertility preferences, knowledge and use of family planning, maternal and child health and nutrition, awareness and behavior regarding HIV/AIDS and other sexually transmitted infections, malaria control program indicators, and female genital cutting (female circumcision). It was designed as follow-on to the 1995 EDHS survey. As most of the information collected in the two surveys is similar, it is possible to examine trends in the different indicators over the intervening period of six and a half years. The major findings are considered at the national level, by urban-rural residence, and by region (the six zobas).

The National Statistics and Evaluation Office (NSEO) was responsible for implementing the survey. Fourteen survey teams conducted interviews from the last week of March to the first week of July 2002.

FERTILITY

Fertility Trends: Fertility has declined sharply since 1995; the total fertility rate has dropped from 6.1 children per woman to 4.8 children, a decline of 21 percent. Because of this decline, at current fertility levels, the average Eritrean woman will give birth to five children instead of six children by the end of her reproductive years. The decline is more rapid among rural women and younger women (below age 35), and is most notable among adolescents (15-19).

Fertility Differentials: Similar to the pattern that exists in all sub-Saharan countries, fertility among urban women in Eritrea is substantially lower than fertility among rural women. The total fertility rate among rural women is 5.7 children per women, compared with 3.2 children in urban areas. By zoba, fertility ranges from a high of 5.7 children per woman in zoba Debub to a low of 3.4 children in zoba Maekel.

Fertility levels are related to various socioeconomic characteristics of women. Education, for example, has a negative relationship with fertility. The total fertility rate decreases from 5.5 children among women with no education to 3.1 children among women who have at least some secondary education.

Birth Intervals: The length of interval between births influences overall fertility, as well as the health status of mother and child. The interval between births in Eritrea has increased from 31.3 months in 1995 to 33.6 months in 2002. The optimal interval between births is at least 36 months. In Eritrea, 43 percent of births occur with the optimal birth interval, compared with 35 percent in 1995.

Nuptiality: Women's age at marriage has been increasing. For example, the proportion of women age 15-19 still single has increased from 62 percent in1995, to 69 percent in 2002. In 1995, almost six in ten women were married by age 18, compared with less than half in 2002. These results indicate that the rising age at marriage is an important factor in fertility decline in Ertirea. The proportion of never-married women who reported that they had sex in the year before the survey is less than 3 percent.

Childbearing at Young Ages: Fourteen percent of adolescent women (15-19) are either already mothers (11 percent) or are currently pregnant with their first child (3 percent). The rate for adolescent women has declined substantially since 1995 (23 percent). The decline is mainly attributable to lower teenage childbearing among rural women. In 1995, one in three rural teenagers had started childbearing, compared with one in five in 2002, a decline of more than 40 percent.

Unplanned Fertility: The 2002 EDHS data indicate that one-fourth of all births in the five years preceding the survey were unplanned; 6 percent were unwanted and 20 percent were mistimed (wanted later). The proportion of mistimed births has increased from 14 percent in the 1995 EDHS to 20 percent in 2002, while the proportion of unwanted births increased only slightly from 5 percent to 6 percent. If all births associated with unwanted pregnancy were avoided, the total fertility rate in Eritrea would be 4.4 children per woman, which is roughly one-half child lower than the observed total fertility rate.

Ideal Family Size: Eritrean women want to have large families; the mean ideal number of children for all women is 5.8. Overall, only one in ten women wants less than four children, while more than one-fourth want seven or more. One in ten women considers 10 or more children to be the ideal family size.

FAMILY PLANNING

Knowledge of Family Planning Methods: Almost nine in ten women know of at least one modern method of family planning. The pill, male condoms, and injectables are the most widely known modern methods among all subgroups. Knowledge of family planning methods has increased since 1995. The mean number of methods known by all women increased by almost two methods from 2.6 in 1995 to 4.4. in 2002.

Mass media are important sources of information on family planning. A majority of women (55 percent) heard or saw a family planning message on the radio, on television, in a newspaper/ magazine, or on a poster in the 12 months before the survey. Half of all women have heard a family planning message on the radio, which is the major medium for all subgroups. Women's exposure to all other media is much lower. Nineteen percent of women reported seeing a family planning message on television, and the same proportion saw a family planning message on a poster. Only 16 percent saw a family planning message in newspapers or magazines.

Trends in Contraceptive Use: Contraceptive use remains low in Eritrea; there has been no increase since 1995. The 2002 EDHS results show that only 8 percent of currently married women reported using contraception at the time of the survey, with 5 percent depending on modern methods and 3 percent relying on traditional methods. Currently, the most widely used methods among married women are injectables (3 percent), lactational amenorrhea method (LAM) (2 percent), and the pill (1 percent).

Differentials in Family Planning Use: There are marked differences by background characteristics in current use of family planning methods among currently married women. Urban women are more than four times as likely to use a method of contraception as rural women (17 versus 4 percent). Among zobas, use of contraception is highest in zoba Maekel (20 percent) and lowest in zoba Gash-Barka (2 percent). One-fifth of women with some secondary education reported using a method, compared with only 4 percent of women with no education.

Source of Family Planning Methods: The survey results show that public facilities remain the major source for modern contraceptive methods in Eritrea, providing family planning methods to nearly three-fourths (74 percent) of current users. Fifteen percent of users get their methods from private medical sources, and 8 percent get their methods from other private sources (mainly shops).

As in 1995, three-fourth of pill users and more than 90 percent of users of injectables rely on the public sector. The Family Reproductive Health Association of Eritrea (previously the Planned Parenthood Federation of Eritrea) remains the major source for pills, while government hospitals are the predominant source for injectables users.

Unmet Need for Family Planning: Currently married women who either do not want any more children or want to wait two or more years before having another child, and are not using contraception, are considered to have an unmet need for family planning. The total unmet need for family planning in Eritrea is 27 percent — 21 percent for

spacing and 6 percent for limiting births. Because unmet need has remained unchanged since 1995, no progress has been made in satisfying women's need for family planning. Among currently married women, less than one-fourth of the total demand for family planning is being satisfied.

CHILD HEALTH AND SURVIVAL

Early Childhood Mortality: The 2002 EDHS data indicate that early childhood mortality in Eritrea has declined sharply since 1995. The infant mortality rate has declined from 72 per 1000 live births in the 1995 EDHS survey (1991-1995) to 48 in the 2002 EDHS survey (1997-2001). The under-five mortality rate was 136 per 1000 live births in the period 1991-1995, compared with 93 per 1000 for the period 1997-2001. Factors that have contributed to the decline in child mortality are increasing urbanization, major gains in child immunization, improved nutrition and increasing education among women.

Marked differentials in early childhood mortality exist in Eritrea. Infant mortality ranges from a low of 37 deaths per 1,000 live births in zoba Anseba to a high of 122 in zoba Debubawi Keih Bahri. Living in rural areas, low maternal education, and young age of mothers at birth are factors associated with higher infant and childhood mortality.

Vaccination Coverage: The 2002 EDHS results show that three-fourths of children age 12-23 months are fully vacinated. This represents a substantial increase from the 41 percent fully vaccinated in 1995. Although urban children are more likely to be fully vaccinated, the urban-rural gap has narrowed. It is encouraging to note that the proportion of fully vaccinated children among uneducated mothers has doubled since 1995. Zoba Anseba (92 percent) has the highest proportion of children fully immunized and zoba Debubawi Keih Bahri has the lowest (60 percent).

Childhood Illnesses: The survey provides data on some of the more common childhood illnesses and their treatment. One in five children under five had a cough accompanied by short, rapid breathing—signs of acute respiratory infection (ARI)—in the two weeks before the survey. Of these, 44 percent were taken to a health facility for treatment. Thirteen percent of children under age five were reported to had experienced diarrhea some time in the two weeks preceding the survey. Overall, more than two-thirds of these children received some type of oral rehydration therapy, i.e., solution prepared from packets of oral rehydration salts (ORS), homemade sugar-salt water solution, or increased fluids. Although almost all mothers who had a birth in the five years preceding the survey reported knowing about ORS packets, only 45 percent of children with diarrhea received ORS.

Breastfeeding Practices: The 2002 EDHS data indicate that almost all children under one year of age are breastfed. Despite the universal prevalence of breastfeeding of newborns in Eritrea, the majority of infants are not fed in compliance with WHO/UNICEF recommendations. Exclusive breastfeeding is common but not universal in early infancy in Eritrea. The prevalence of exclusive breastfeeding would be higher except for the early supplementation of breast milk with plain water. Overall, the median duration of any breastfeeding is 22 months; the median duration of exclusive breastfeeding is 2.5 months.

Patterns of Feeding in Early Childhood: During the period when complementary foods should be introduced, at age 6-9 months, only 54 percent of Eritrean infants in this age group received solid or semi-solid foods the day and night preceding the survey and the variety of foods given was limited. These children mainly received foods made from grain and milk, (cheese or yogurt), and to a lesser extent received animal products (meats, poultry, fish, or eggs), and fruits and vegetables, and infant formula.

Micronutrient Supplements: The 2002 EDHS data show that only 38 percent of children age 6-59 months received a vitamin A supplement in the six months preceding the survey. The survey also measured the iodine content of salt used in the household. The results show that over two-thirds (68 percent) of children under age five live in households that use adequately iodized salt.

Nutritional Status of Children: Overall, 38 percent of children under age five are chronically

malnourished or stunted (short for their age), 13 percent are wasted (thin for their height), and 40 percent are underweight (low weight-for-age). Rural children are more than one and a half times as likely to be stunted and wasted as urban children. Among zobas, malnutrition is more prevalent in Gash-Barka, Anseba, and Semenawi Keih Bahri than in other zobas. The prevalence of severe malnutrition among children in these zobas is also higher than in other zobas. A comparison of children under three years in 1995 and 2002 indicates a slight improvement in the nutritional status.

WOMEN'S HEALTH

Maternal Health: The 2002 EDHS findings indicate that there has been a substantial improvement in antenatal care coverage since 1995. Seven in ten women with births in the five years before the survey received antenatal care services for the last birth from a health professional (doctor, trained nurse, midwife or auxiliary midwife), compared with only half of mothers in 1995. Forty-one percent of women with a birth in the five years preceding the survey had four or more antenatal care visit, though only 22 percent made the first visit in the first trimester. Half of women who had a live birth in the five years preceding the survey received at least one tetanus toxoid injection during pregnancy for the most recent birth; 32 percent received multivitamin or vitamin C tablets. Four in ten mothers received iron tablets for the last birth in the five years preceding the survey but almost all took the tablets for less than 60 days.

Delivery under hygienic conditions and where medical assistance is available decreases the risk of maternal morbidity and mortality. Overall, one-fourth of births—compared with 17 percent in 1995—occurred in health facilities, almost all of them public facilities. More than nine in ten women with deliveries outside health facilities do not receive any postnatal checkup.

Three percent of births in the five years preceding the survey were delivered by caesarean section (C-section), indicating a slight increase from 1995. A C-section rate below 5 percent is generally thought to be a reflection of limited access to maternal health services and potentially life-saving emergency obstetrical care.

Female Genital Cutting: Results from the 2002 EDHS show that knowledge of female circumcision is universal among Eritrean women, with almost all respondents (99 percent) having heard of female genital cutting. Nine in ten women (89 percent) reported that they had been circumcised, indicating a slight decline in the proportion of women circumcised in 1995 (95 percent). Among circumcised women, 39 percent had their vaginal area sewn closed (the most severe form of circumcision), 4 percent had some flesh removed, and 46 percent were nicked and no flesh was removed. Younger women (age 15-19) are less likely to be circumcised than older women. Sixty-three percent of women with living daughters indicated that at least one daughter was circumcised.

Attitudes of Eritrean women toward female circumcision are evenly divided: the proportion of women who support continuation of the practice is the same as the proportion who want it to be discontinued (49 percent). As expected, women who are not circumcised are more likely to want the practice discontinued (86 percent) than those who are circumcised (44 percent). Seven percent of circumcised women say they have had problems during sexual relations; one in ten reported having problems during delivery and one in twenty-five reported problems during both sexual relations and delivery.

Constraints to Use of Health Services: Many different factors can be barriers to women seeking health care for themselves. Seventy-two percent of women reported at least one issue or circumstance they regarded as a big problem in seeking health care. The major constraints to women's access to health services are lack of money, distance to health facilities, and having to take transportation. Almost four in ten women mentioned the problem of waiting in line at the health facility as a big problem. Eleven percent of women in Eritrea do not know where to go for health care.

Nutritional Status of Women: The 2002 EDHS collected information on the height and weight of

all women age 15-49. Overall, 2 percent of women are shorter than 145 cm, the cutoff point below which a woman is identified as at risk of delivering a baby with low birth weight. The findings also indicate that more than half of women age 15-49 have a body mass index (BMI)—a measure of a woman's weight relative to her height—in the normal range, and 37 percent have a low BMI (less than 18.5), indicating chronic energy deficiency. Rural women and women with no education are more likely to have a low BMI than urban women and women with some education. In addition, 9 percent of Eritrean women are overweight, including 2 percent that are severely overweight or obese.

WOMEN'S CHARACTERISTICS AND STATUS

Residence and Education: Almost six in ten (57 percent) of the survey respondents live in rural areas. Over half of women age six and over have never been to school.

Women's Migration: More than half of women in Eritrea can be considered migrants because they are not living in the area in which they were born.

Women's Status and Empowerment: Only one in five women is currently working. Two-thirds (65 percent) of these women work for cash. Nearly three-fourths (73 percent) of working women who receive cash earnings report that they are solely responsible for decisions on the use of their earnings.

To assess women's attitudes toward wife beating, women interviewed in the EDHS were asked whether a husband would be justified in beating his wife for specific reasons. Seven in ten women believe that a husband is justified in beating his wife for at least one of the reasons.

MALARIA CONTROL PROGRAM INDICATORS

Mosquito nets: The use of insecticide-treated mosquito nets has been proven to reduce malaria transmission. The 2002 EDHS found that 34 percent of households owned at least one mosquito net. Possession of mosquito nets is more common in rural areas (37 percent) than urban areas (28 percent), but it is most common in small towns (45 percent). Mosquito nets are least prevalent in zoba Maekel, where malaria prevalence is low.

Women: Seven percent of all women and pregnant women slept under a mosquito net the night before the interview; however, only 3 percent used an insecticide-treated net. Use of antimalarials by pregnant women is low. Only five percent of women who had at least one birth in the five years preceding the survey reported that they received antimalarial treatment for the last birth.

Children: Twelve percent of children under five slept under a mosquito net the night before the interview. However, only 4 percent of children under five slept under an insecticide-treated net. (Note: the survey was conducted in the dry season, when mosquito net use is lower than average).

Fever is a major manifestation of malaria in children. Thirty percent of children under five had a fever in the two weeks preceding the survey. Fever was most prevalent among children age 6-23 months. Among febrile children, only 4 percent were treated with antimalarial medication, mostly chloroquine.

HIV/AIDS AND OTHER STIs

Knowledge of HIV/AIDS and Prevention Methods: The 2002 EDHS results indicate that awareness of HIV/AIDS is nearly universal among women in Eritrea, with 96 percent of women reporting that they have heard of AIDS. The ways to prevent HIV/AIDS mentioned most frequently by respondents were staying faithful to one partner (72 percent), using condoms (54 percent), and abstaining (47 percent). Almost eight in ten women know two or more programmatically important ways to avoid getting infected with HIV.

Knowledge of ways that HIV can be transmitted is important in preventing the spread of the disease. More than seven in ten women recognize that the HIV virus can be transmitted from mother to child during pregnancy (80 percent),

during delivery (72 percent), and through breastfeeding (70 percent). Three-fourths of women know that a healthy-looking person can have the AIDS virus.

Knowledge of Condoms and Use of Condoms: One of the main objectives of the National HIV/AIDS Control Programme is to encourage consistent and correct use of condoms, especially among high-risk groups. The 2002 EDHS data show that 54 percent of women know a source for condoms. However, use of condoms is negligible, with only 2 percent of women having used condoms during the last sexual intercourse in the past year.

Social Aspects of HIV/AIDS Prevention and Mitigation: Discussion of HIV/AIDS with a with spouse or partner is an important first step in prevention of HIV/AIDS and the control of the epidemic. The 2002 EDHS survey results show that only 37 percent of women have had such discussions with their partners. One-fourth of women say that they would not be willing to take care of a relative who had HIV/AIDS

Knowledge of Signs and Symptoms of Sexually Transmitted Infections (STIs): Sexually transmitted infections (STIs) are believed to be important predisposing factors in HIV/AIDS transmission. Fifty-eight percent of women in Eritrea have no knowledge of STIs other than HIV. Among those who have heard of STIs, one in ten women was unable to mention any symptoms of STIs in a man and a woman.

ERITREA

Note: This is not the official and political map of Eritrea.

INTRODUCTION 1

1.1 GEOGRAPHY, HISTORY, AND THE ECONOMY

Geography

Eritrea is situated in the Horn of Africa and lies north of the equator between latitudes 12°22' N and 18°02' N, and longitudes 36°26'21" E and 43°13' E. It has an area of 122,000 square kilometers. To the east, the country is bordered by the Red Sea, extending about 1,212 kilometers from Ras Kasar in the north to Dar Elwa in the southeast. Djibouti borders Eritrea in the southeast, Ethiopia in the south, and the Sudan in the north and west. Administratively, the country is divided into six *zobas* (regions): Anseba, Debub, Debubawi Keih Bahri, Gash Barka, Maekel, and Semenawi Keih Bahri (see map).

Eritrea is a land of contrasts with land rising from below sea level to 3,000 meters above sea level. There are three major physiographic zones: the Western Lowlands, the Central and Northern Highlands, and the Eastern Lowlands (also referred to as the Coastal Plains). Temperature varies with altitude: the mean annual temperature ranges from 16°-18°C in the Highlands to 28°C in the Lowlands to more than 30°C in the Coastal Plains (Ministry of Land, Water and Environment, 1997). Most of the Western Lowlands and Coastal Plains are associated with hot and dry climatic conditions, while the Highlands are relatively cool. The presence of flat land, relatively fertile soil, and a milder climate makes the Central Highlands a center of rain-fed agricultural activity. Several of the major urban centers of Eritrea, including the capital city, Asmara, are located in the Central Highlands zone. During good rains the Western Lowlands have a potential for cultivation and agro-pastoralism. The Coastal Plains is the location of the two major port towns of Eritrea, Massawa and Assab. In general, the Central Highlands is the most densely populated part of the country, while the Lowlands are sparsely populated.

Rainfall in Eritrea ranges from less than 200 mm per annum in the Eastern Lowlands to about 1,000 mm per annum in a small pocket of the Escarpment; the annual rainfall in the Highlands ranges from 450 mm to 600 mm. The southern part of the Western Lowlands receives 600-800 mm per annum, but rainfall decreases substantially as one moves northward. The extremely low rainfall in the Eastern Lowlands causes aridity and a hostile environment for agriculture, grazing, and industry. There are two major periods of precipitation in Eritrea. One, from June to September, covers both the Western Lowlands and the Highlands. The second comes between October and March and covers the Eastern Lowlands.

History

Because of Eritrea's strategic position on the Red Sea, it has fallen victim to many invaders and colonizers. The Ottoman Turks controlled the northern and coastal areas from the middle of the sixteenth century to the second half of the nineteenth century, when Egypt evicted them from their last stronghold, Massawa, in 1872. With the opening of the Suez Canal in 1869, the European colonizers became interested in the Red Sea and Horn of Africa. Italy, after establishing a foothold at Assab through a maritime company, *Compagnia Maritimma Rubattino*, extended its control, and declared Eritrea its first African colony in 1890. In 1941, Italy was defeated by the Allied forces, and Britain took over the administration of Eritrea. In 1952, after 10 years of British colonial rule, Eritrea was federated with Ethiopia by the United Nations against the will of the Eritrean people. A decade later, Ethiopia abrogated the federal arrangement of the United Nations and annexed Eritrea as one of its provinces. This led to the Eritrean struggle for self-determination, which resulted in a destructive war lasting from 1961 to 1991.

Two years after the end of the war, a United Nations supervised referendum was held to determine Eritrea's political status; 99.8 percent of the voters chose independence in that referendum. Independence was formally declared in May 1993. Thereafter, Eritrea became a member of the United Nations and many other international and regional organizations.

Economy

Agriculture and pastoralism are the main sources of livelihood for about 80 percent of Eritrea's population. The agricultural sector depends mainly on rain, with less than 10 percent of the arable land currently irrigated. Consequently, productivity is low and the agricultural sector, including livestock and fisheries, accounts for only one-fifth of the gross domestic product (GDP). Eritrea is one of the poorest countries in the world, with GDP per capita of about US$ 200, well below the average US$ 270 for less developed countries (UNDP, 2001).

The war for liberation destroyed most of Eritrea's infrastructure and devastated its economy and environment. This compelled Eritrea to reconstruct its social, economic and physical infrastructure entirely. In an effort to place the economy on a path of sustainable development, the government had targeted the period 1998-2000 to complete the transitional phase of rehabilitation and reconstruction. Nonetheless, in May 1998, under the pretext of a border dispute, Ethiopia declared war against Eritrea and occupied some parts of zobas Gash Barka and Debub. As a result of this war, Eritrean villages, towns, bridges, power plants and public and private buildings were destroyed systematically through aerial and artillery bombardment. The impact of the war on the economy of Eritrea is more visible in the destruction of infrastructure, which had been painfully built in the seven years of peace. Although growth in GDP had reached about 7 percent over the period 1994-1997 (University of Asmara, 2000), it fell to about 3 percent in 1999 due to the border conflict.

Government development efforts not only concentrated on rebuilding and rehabilitating war-damaged and destroyed economic and social infrastructures, but also on formulating numerous national economic and social development strategies and policies. Among these was the Macro Policy of 1994, which mapped out short-, medium-, and long-term reconstruction and development programs. In the Macro Policy, human capital formation through education and health was identified as the main strategy for long-term national development. Eritrea's Macro Policy advocated adequate and sustainable economic growth and social development to reduce poverty and create a basis for all of Eritrea's citizens to provide a better life for themselves and their children.

Eritrea has abundant natural resources including arable land (26 percent of the total area) of which only about 4 percent is under cultivation (World Food Programme, 2002). Although surface water is inadequate in Eritrea, there are adequate supplies of ground water, particularly in the Western Lowlands and in some parts of the Coastal Plains, that can be used for both household and industrial purposes. Eritrea is also believed to have varied and extensive mineral resources including copper, gold, iron, nickel, silica, sulfur and potash. Good quality marble and granite also exist in large quantities (Ministry of Land, Water and Environment, 1997). The Red Sea offers opportunities for the fishing industry, for expanding salt extraction industry, tourism, and possibly extraction of oil and gas. At present, most of these natural resources have not been fully exploited.

1.2 POPULATION

No population census has ever been carried out in Eritrea. As a result, there are no reliable estimates of the population currently residing in Eritrea or the population of Eritreans living abroad, many of whom are potential returnees. However, based on a population count, the Ministry of Local Government estimated the total population of Eritrea to be about 3.2 million as of 2001. As there is no

reliable information about population size, the population growth rate is not known with precision. The population is essentially rural with about 80 percent of the people living in the countryside. The urban population is characterized by rapid growth, partly as the result of returning refugees from the neighboring and other countries, and partly due to high rural-urban migration. The population of Eritrea is not uniformly distributed throughout the country. About 50-60 percent of the population lives in the Highlands. The age distribution is typical of high fertility regimes in which a larger proportion of the population is to be found in the younger age groups than in the older age groups. Eritrea is a multi-ethnic society with nine different ethnic groups speaking nine different languages and professing two major religions, namely, Christianity and Islam.

Great efforts have been made by the National Statistics and Evaluation Office (NSEO) to collect demographic, health, and socioeconomic information through surveys. The first nationally representative survey conducted by the NSEO was the 1995 Eritrea Demographic and Health Survey (1995 EDHS) (National Statistics Office and Macro International, 1997). The 2002 Eritrea Demographic and Health Survey (2002 EDHS) was carried out by the same office. These surveys provide detailed information on fertility, infant and child mortality, health and nutritional status of women and children, breastfeeding, and contraceptive use, among other topics.

1.3 HEALTH SERVICES AND PROGRAMS

The introduction of modern health services into Eritrea is relatively recent. The first hospital was established in Asmara by the Italians at the end of the nineteenth century. In the period prior to federation with Ethiopia, Eritrea had a relatively advanced health care system at least by the standards of the time. However, during the three decades of the war for independence, almost all existing health facilities were destroyed, medical supplies were disrupted, and health professionals abandoned their posts.

Since independence, the Ministry of Health (MOH) has made significant progress in ensuring access to health care services through restoration of health facilities damaged during the war, the provision of adequate supplies of drugs and equipment, the expansion of available health services to communities where they are lacking, through the construction of new facilities and the training of qualified health personnel.

Health services in Eritrea focus on primary health care (PHC) and are available to everyone. The PHC strategy emphasizes the development of basic health services at the local level to reach more people and to strengthen preventive public health activities including the prevention and control of endemic diseases such as HIV/AIDS, malaria, tuberculosis, and sexually transmitted infections (STIs). The major objectives of the PHC program are to:

- Reduce infant and maternal mortality and increase life expectancy through the provision of adequate and equitable maternal and child health services, promotion of adequate nutrition, and control of communicable diseases,
- Ensure that health services are available and accessible to all urban and rural communities,
- Sensitize the community to common preventable health problems and design appropriate activities through genuine community involvement,
- Promote awareness among the relevant offices and the community at large that health problems can only be solved through multi-sectoral cooperation,
- Create awareness among the community that responsibility for one's health rests with the individual, as an integral part of the family, and

- Move towards self-sufficiency in manpower by training cadres required at all levels (WHO, 2002a).

Since effective implementation of PHC depends on approaches that coordinate and make use of various sectors, and not simply health care activities, the MOH has put more emphasis on an integrated program of PHC that incorporates cross-cutting issues. This is because the causes of ill health are related to both health factors and non-health factors. The important cross-cutting issues include community participation, intersectoral collaboration, decentralization of health services, information, education and communication (IEC), monitoring and supervision of programs and capacity-building (mainly research and training).

Currently, the MOH is operating 23 hospitals, 52 health centers, and 225 health stations, most of which are government owned (WHO, 2002a). When compared with the data at independence, these figures indicate a significant increase in health services; the number of hospitals grew by about 50 percent, while health stations and health centers grew by more than 100 percent. The substantial growth in the number of health stations and health centers indicates a great effort on the part of MOH to develop and expand basic health care services at the local level, particularly to people living in rural areas. In terms of health manpower, significant improvements have been made in both recruitment and training. For example, between 1995 and 2000, the number of physicians and nurses increased by 60 percent and 107 percent, respectively.

Another area of concern to MOH since independence is maternal and child health and family planning (MCH/FP). Before 1992, family planning services were provided at locations where MCH services were delivered. In 1992, the Planned Parenthood Association of Eritrea (PPAE) was established to promote family planning services, particularly among women and youth. About seven years later, the name of the association was changed to Family Reproductive Health Association of Eritrea (FRHAE), to encompass a broader area of activities. The FRHAE has the following objectives (FRHAE, 2000):

- To contribute to the advancement of family welfare by establishing health facilities, social services and other delivery systems for the purpose of advising and counseling couples, youth, and interested individuals regarding responsible parenthood,

- To assist families to solve problems of infertility and sub-fertility by providing them with appropriate preventive and remedial social and psychological services,

- To promote public awareness and understanding about the marriage relationship, sexual life, reproductive health, and related matters through educational programs, and

- To conduct research on and compile and disseminate information about child feeding and rearing practices, quality of life, and reproductive and sexual activity.

Although significant efforts have been made to improve the health care system since independence, there remain some deficiencies both in coverage and quality. Health care services are still not adequate for the population, a problem common to most African countries. There is, for example, a shortage of skilled medical personnel, medications, and equipment. In 2000, the ratio of population per physician was 13,144, while the ratio of population per nurse was 2,804 (WHO, 2002a). Another problem is the uneven distribution of medical facilities. There is a high concentration of health facilities in urban areas, especially in the capital city, Asmara. Traditional healers are still consulted in Eritrea, especially in the rural areas. In this respect, although the MOH has made efforts to improve the health situation through educational campaigns directed to eradicate harmful traditional practices, such as female circumcision, it

appears that there are still problems in this area. Also, the health system of Eritrea provides only limited services on reproductive health and family planning.

1.4 OBJECTIVES OF THE SURVEY

The major aim of the 2002 EDHS was to provide up-to-date information on: fertility and childhood mortality levels, fertility preferences, awareness and use of family planning methods, use of maternal and child health services, breastfeeding practices, nutritional status of mothers and young children, and awareness and behavior regarding HIV/AIDS and other sexually transmitted infections. It was designed as a follow-on to the 1995 EDHS survey. However, compared with the 1995 survey, the 2002 EDHS is significantly expanded in scope and coverage. More specifically, the 2002 EDHS survey was designed to:

- Collect data at the national level that allow the calculation of demographic rates, particularly fertility and childhood mortality rates;
- Assess the health status of mothers and children under age five in Eritrea, including nutritional status, use of antenatal and maternity services, treatment of recent episodes of childhood illness, use of immunization services, and malaria prevention activities;
- Measure the levels and patterns of knowledge and behavior of women about sexually transmitted infections, HIV/AIDS, and female circumcision;
- Provide information on changes in fertility and contraceptive prevalence and the factors that have contributed to these changes, such as marriage patterns, desire for children, availability of contraception, breastfeeding practices, and other important socioeconomic factors; and
- Assess gender issues.

1.5 ORGANIZATION OF THE SURVEY

The 2002 EDHS survey is a comprehensive survey that involved several agencies. The NSEO, which is a part of the Office of the President, had the major responsibility for conducting this survey. The various departments of the Ministry of Health collaborated with NSEO in all phases of the survey and provided valuable technical help. Financial support for the survey was provided by the U.S. Agency for International Development (USAID) and the Ministry of Health through the Technical Assistance and Support Contract (TASC) with John Snow, Inc. The United Nations Population Fund and the Canadian International Development Agency supported the 2002 EDHS by supplying all the field vehicles. Technical assistance was provided by ORC Macro.

1.6 SAMPLE DESIGN

The objectives of the 2002 Eritrea survey are similar to those of the 1995 EDHS survey, with major findings considered at the national level, by urban-rural residence, and by region (the six zobas).

The sample for the 2002 EDHS survey is a nationally representative sample of households and is self-weighted in each of the six zobas but not proportionally distributed among the zobas. The sample was designed using information provided by the Ministry of Local Government on the total number of households in various administrative units, mainly villages (in rural areas) and towns (in urban areas). It is a two-stage cluster design in rural areas and a three-stage cluster design in urban areas.

A national sample of 368 clusters was selected, with 249 in rural areas and 119 in urban areas. A complete household listing operation was carried out in all the selected clusters to provide a frame for the final systematic selection of households. Twenty-five households were selected from each cluster in urban and rural areas in all zobas except one. In zoba Debubawi Keih Bahri, 40 households were selected in each cluster because this zoba contains less than 4 percent of the national population, and has transportation problems, so it was decided to select fewer, larger clusters in this zoba.

Around 9,800 households were selected from the 368 clusters to provide an expected sample of 8,500 eligible women. A detailed sample design description is presented in Appendix A.

1.7 QUESTIONNAIRES

Two kinds of questionnaires were used in the 2002 EDHS survey: the Household Questionnaire and the Women's Questionnaire. The contents of the questionnaires were based on the MEASURE *DHS+* Model "B", which was developed for countries with low levels of contraceptive use. The NSEO held several meetings with experts and professionals from partner ministries, most importantly the Ministry of Health, to discuss the questionnaires. The MOH, the Ministry of Education, the Ministry of Labor and Human Welfare, and other concerned institutions in Eritrea actively participated in reviewing and modifying the questionnaires to address Eritrean concerns. Both questionnaires, which were originally prepared in English, were translated into and printed in seven local languages: Tigrigna, Tigre, Bilen, Saho, Afar, Kunama, and Nara. A pretest of the questionnaires was conducted in December 2002.

The Household Questionnaire was used to list all of the usual members and visitors who spent the night before the interview in the selected households. Basic background information on each listed person was collected, including age, sex, marital status, educational level attained, occupation, and relationship to the head of the household. The information on age was used to identify women eligible for the individual interview and children less than five years of age whose height and weight would be measured. The Household Questionnaire also obtained information on selected socioeconomic indicators such as number of rooms in the dwelling, type of floor material, source of drinking water, type of toilet facilities, and ownership of various durable goods. Information on the household's possession of mosquito nets was collected, and a test was conducted by interviewers to assess whether the household used cooking salt fortified with iodine.

The Women's Questionnaire was used to collect information from all women age 15-49. Respondents were asked questions on the following topics: background characteristics; reproductive history; contraceptive knowledge and use; antenatal, delivery and postnatal care; infant feeding practices; child immunization, health and nutrition; marriage and sexual activity; and fertility preferences. In addition, respondents were asked questions about their husband's background characteristics. Data on female circumcision and on knowledge, attitudes and behavior related to HIV/AIDS and other sexually transmitted infections were collected.

Training and Fieldwork

Training of the field staff, namely interviewers, supervisors and field editors for the main survey was conducted over a three-week period from February to March 2002. The training was conducted following the standard DHS training procedures, including class presentations, mock interviews, field practice and tests. There was a detailed review of items on the questionnaires and interviewer instructions, and the trainees practiced weighing and measuring women and children. The trainers included NSEO staff, guest lecturers from various departments of the Ministry of Health and the ORC Macro country manager.

A total of 123 female field staff were trained, of which 98 with good performance were selected to form 14 teams for the fieldwork. The remaining 25 trainees were assigned as data processing staff. Following the training, the fieldwork for the survey was conducted from the last week of March to the first week of July 2002.

1.9 DATA PROCESSING

All completed questionnaires for the EDHS survey were brought to the NSEO in Asmara for data processing, which consisted of office editing, coding of open-ended questions, data entry, and secondary editing. A team of 14 data entry clerks, one questionnaire administrator, 14 office editors, two data entry supervisors, six secondary editors, and two data processing experts from ORC Macro were involved in the data processing. Data entry and editing were completed between April 16 and July 26, 2002.

1.10 COVERAGE AND RESPONSE RATES

Table 1.1 presents the results of household and individual interviews and response rates for Eritrea as a whole and by urban-rural residence. A total of 9,824 households were selected in the sample, of which 9,512 households were occupied. Of the total occupied households, 9,389 were interviewed successfully, giving a household response rate of 99 percent. In general, response rates for households were not influenced by urban-rural residence. As Table 1.2 indicates, the major reason for not completing household interviews was that no competent respondent was found at home[1] (1 percent).

Table 1.1 Results of the household and individual interviews and response rates

Number of households and interviews and response rates, according to residence, Eritrea 2002

	Urban				
Result	Asmara	Other towns	Total	Rural	Total
Household interviews					
Households selected	1,076	2,169	3,245	6,579	9,824
Households occupied	1,043	2,134	3,177	6,335	9,512
Households interviewed	1,023	2,104	3,127	6,262	9,389
Household response rate	98.1	98.6	98.4	98.8	98.7
Individual interviews					
Number of eligible women	1,205	2,138	3,343	5,753	9,096
Number of eligible women interviewed	1,123	2,057	3,180	5,574	8,754
Eligible woman response rate	93.2	96.2	95.1	96.9	96.2

From the interviewed households, 9,096 women eligible were identified for the individual interview, of whom 8,754 were successfully interviewed. The women's response rate for the 2002 EDHS was 96 percent (Table 1.1). Nonresponse among women was mainly due to the absence of women at home at the time of interview, despite repeated visits to the household. The women's response rate is higher in rural areas than in urban areas (Table 1.2). Details of the fieldwork and sample design are presented in Appendix A.

[1]An absent household is considered not occupied.

Table 1.2 Sample implementation

Percent distribution of households and eligible women by results of the household and individual interviews, and household and eligible women response rates, according to residence, Eritrea 2002

Result	Urban			Rural	Total
	Asmara	Other towns	Total		
Selected households					
Completed	95.1	97.0	96.4	95.2	95.6
Household present but no competent respondent at home	1.7	1.3	1.4	1.1	1.2
Refused	0.2	0.1	0.1	0.0	0.0
Household absent	2.0	1.2	1.5	3.1	2.6
Dwelling vacant/address not a dwelling	0.9	0.3	0.5	0.4	0.4
Dwelling destroyed	0.1	0.1	0.1	0.2	0.1
Total	100.0	100.0	100.0	100.0	100.0
Number of sampled households	1,076	2,169	3,245	6,579	9,824
Household response rate	98.1	98.6	98.4	98.8	98.7
Eligible women					
Completed	93.2	96.2	95.1	96.9	96.2
Not at home	3.9	2.3	2.9	1.8	2.2
Postponed	0.2	0.0	0.1	0.1	0.1
Refused	0.4	0.4	0.4	0.1	0.2
Partly completed	0.1	0.1	0.1	0.1	0.1
Incapacitated	0.8	0.7	0.7	1.0	0.9
Other	1.4	0.1	0.6	0.1	0.3
Total	100.0	100.0	100.0	100.0	100.0
Number of women	1,205	2,138	3,343	5,753	9,096
Eligible woman response rate	93.2	96.2	95.1	96.9	96.2

CHARACTERISTICS OF HOUSEHOLDS AND HOUSEHOLD MEMBERS

2

The purpose of this chapter is to provide a descriptive summary of some socioeconomic and demographic characteristics of the population in sampled households. These characteristics include age, sex, place of residence, educational status, marital status, household economic status (the wealth index), and children's living arrangements. The chapter also discusses household facilities and housing characteristics such as source of drinking water, electricity, sanitation facilities, flooring materials, and ownership of household durable goods. Information on the characteristics of the surveyed population is essential because it provides a more complete picture of the household population and gives a wider perspective for interpreting the survey findings in subsequent chapters.

For the purpose of the 2002 EDHS survey, a household is defined as a person or a group of related or unrelated persons who usually live in the same dwelling unit and who have common cooking and eating arrangements. A member of the household is any person who usually lives in the household and a visitor is someone who is not a member of the household, but who stayed in the household the night preceding the interview.

The Household Questionnaire in the survey collected information from all usual residents of the selected household (de jure population) and visitors who stayed in the selected household the night before the interview. The de facto population includes all persons who stayed in the household the night before the interview. The inclusion of both populations in the household survey allows the analysis of either the de jure or the de facto population.

2.1 HOUSEHOLD POPULATION BY AGE, RESIDENCE, AND SEX

The percent distribution of the de facto household population in the 2002 EDHS is shown in Table 2.1 by five-year age groups, according to sex and residence. Of the total household population sampled, 62 percent were living in rural areas and 38 percent in urban areas. Forty-five percent of the household population were males and 55 percent were females. The proportion of males in the sampled households is slightly lower than in 1995. Overall, the age distribution in Table 2.1 shows the expected pattern. The proportion in each five-year age group generally decreases with increasing age. An important exception is the age group 0-4 years, in which the proportions are lower than the next age group (i.e., 5-9). The lower proportions at age 0-4 years are partly due to a recent decline in fertility (see Chapter 3).

Figure 2.1 shows the age-sex structure of the household population more clearly in a population pyramid. The pyramid is broad at the base with the next adjacent bar slightly wider. This is a pattern of a youthful population with high but recently declining fertility.

The distribution of the male and female household population by single year of age is presented in Figure 2.2. The figure shows noticeable heaping at ages ending with 0 and 5 for both sexes. Ages ending with 1 and 9 are underreported.

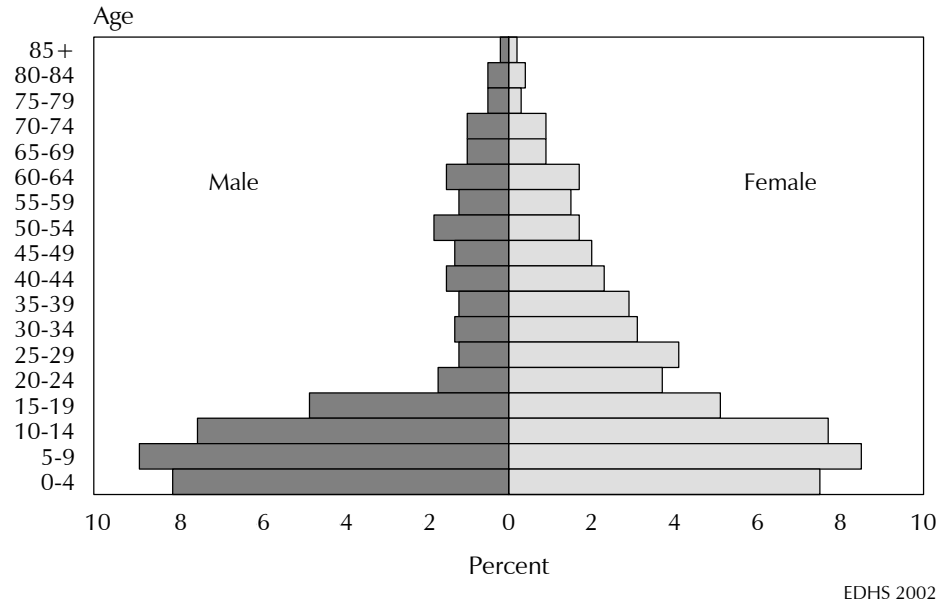
Table 2.1 Household population by age, residence and sex

Percent distribution of the de facto household population by five-year age group, according to sex and residence, Eritrea 2002

	Urban			Rural			Total		
Age	Male	Female	Total	Male	Female	Total	Male	Female	Total
<5	14.8	11.8	13.1	18.2	14.5	16.2	17.0	13.4	15.0
5-9	17.5	12.5	14.7	20.4	17.4	18.7	19.3	15.5	17.2
10-14	15.7	13.6	14.5	17.7	14.7	16.0	16.9	14.2	15.5
15-19	13.7	11.7	12.6	10.4	8.6	9.5	11.6	9.8	10.6
20-24	4.8	7.9	6.5	3.8	6.4	5.2	4.2	7.0	5.7
25-29	4.3	8.9	6.9	2.2	6.5	4.5	3.0	7.5	5.4
30-34	3.7	5.3	4.6	2.3	5.1	3.8	2.8	5.2	4.1
35-39	2.8	5.7	4.5	2.2	4.7	3.5	2.4	5.1	3.9
40-44	3.2	3.7	3.5	2.9	4.0	3.5	3.0	3.9	3.5
45-49	3.2	3.3	3.3	2.3	3.6	3.0	2.6	3.5	3.1
50-54	3.6	4.3	4.0	3.6	3.0	3.3	3.6	3.5	3.5
55-59	2.7	3.0	2.9	2.7	2.8	2.7	2.7	2.8	2.8
60-64	3.4	2.9	3.1	3.4	3.3	3.3	3.4	3.2	3.3
65-69	2.3	1.7	2.0	2.3	1.8	2.1	2.3	1.8	2.0
70-74	1.7	1.7	1.7	2.4	1.9	2.1	2.1	1.8	2.0
75-79	1.3	0.8	1.0	1.3	0.6	0.9	1.3	0.7	1.0
80 +	1.2	1.2	1.2	1.9	1.1	1.4	1.6	1.1	1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	6,504	8,423	14,929	11,362	13,281	24,644	17,865	21,703	39,573

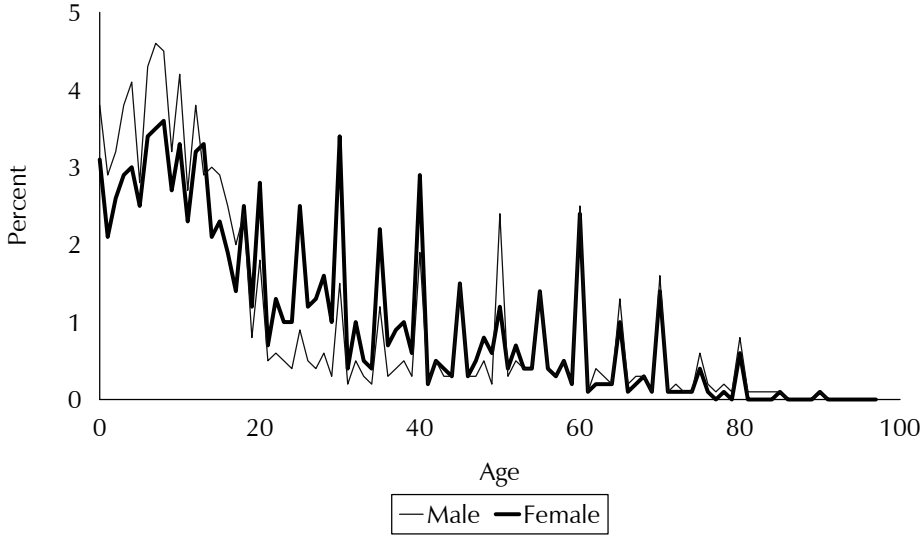
Note: Totals include a small number of people with age or sex not known.

Figure 2.1
Population Pyramid



EDHS 2002

Figure 2.2
Distribution of the De Facto Household Population by Single Year of Age and Sex



EDHS 2002

2.2 HOUSEHOLD COMPOSITION

Table 2.2 presents the distribution of de jure households in the 2002 EDHS sample by sex of head of household and by number of household members. These characteristics are important because they are often associated with socioeconomic differences between households. In addition, the size and composition of households affect the allocation of financial and other resources among household members, which in turn influences the well-being of these individuals. Household size is related to crowding, which can lead to unfavorable health conditions.

Since 1995, the proportion of households in Eritrea headed by females has increased. Slightly more than half (53 percent) of household heads are males, indicating a substantial decrease since 1995 (69 percent). The proportion of female-headed households is higher in urban areas (52 percent) than in rural areas (43 percent). All zobas except zoba Debub, have predominantly male-headed households. Forty-three percent of households have 2-4 members. Large households (9 or more members) account for 8 percent of all households and single-person households account for 7 percent. The proportion of single-person households is higher in urban areas (9 percent) than in rural areas (6 percent). Large households are most common in rural areas. The average household size is 4.8 persons, which is larger than the household size observed in both urban areas and rural areas in 1995 (4.4). Since 1995, the mean household size has increased more in rural areas (4.9) than in urban areas (4.7).

In the 2002 EDHS, information was collected on the displacement status of household members due to the recent war between Eritrea and Ethiopia. Respondents to the Household Questionnaire were asked whether there were any members in the household who had been displaced from their usual place of residence due to the recent war. According to Table 2.2, 7 percent of households have at least one displaced person—11 percent of urban households and 4 percent of rural households. By zoba, the proportion of households with displaced persons is higher in zobas Maekel (11 percent) and Gash-Barka (8 percent) than in other zobas. The average number of displaced persons (in households with displaced persons) is 3.5. Zoba Gash-Barka has the highest mean number of displaced persons (4.6).

Table 2.2 Household composition according to residence and zoba

Percent distribution of households by sex of head of household and household size, and percentage of households with displaced persons, according to residence and zoba, Eritrea 2002

Characteristic	Residence		Zoba						
	Urban	Rural	Debubawi Keih Bahri	Maekel	Semenawi Keih Bahri	Anseba	Gash-Barka	Debub	Total
Sex of head of household									
Male	47.8	56.8	54.5	50.6	61.6	59.8	59.3	45.1	53.3
Female	52.2	43.2	45.5	49.4	38.4	40.2	40.7	54.9	46.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of usual members									
1	8.8	6.2	9.2	8.8	6.0	4.8	6.8	7.6	7.2
2	11.9	12.3	17.1	12.3	13.3	10.2	13.8	10.8	12.2
3	14.8	15.1	18.4	13.2	15.4	14.5	17.8	14.1	15.0
4	16.9	15.1	16.1	16.3	15.8	16.0	15.1	15.6	15.8
5	13.7	13.3	13.8	11.7	15.2	12.8	14.4	13.6	13.4
6	11.9	12.9	10.8	11.9	12.7	13.3	11.8	13.3	12.5
7	8.6	9.8	6.4	9.7	9.6	9.8	8.5	9.8	9.4
8	5.8	6.8	4.4	6.5	5.7	8.9	5.8	6.3	6.4
9+	7.6	8.5	3.7	9.7	6.3	9.8	6.0	9.0	8.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean size	4.7	4.9	4.1	4.9	4.7	5.1	4.6	4.9	4.8
Percentage of households with displaced persons	10.6	4.0	3.4	10.9	0.9	1.2	8.1	7.4	6.6
Number of households	3,634	5,755	328	2,122	1,195	1,181	1,800	2,763	9,389
Mean number of displaced persons per household[1]	3.4	3.5	2.6	3.2	*	*	4.6	3.1	3.5
Number of households with displaced persons	384	225	11	227	10	15	144	203	610

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
[1] Based on households with displaced persons

2.3 FOSTERHOOD AND ORPHANHOOD

Foster children are children under 15 years of age who are not living with either of their biological parents. Orphaned children are children under 15 years of age who have lost one or both of their biological parents. To measure the prevalence of child fostering and orphanhood, four questions were asked in the Household Questionnaire on the survival status and residence of the parents of children under 15 years of age. Information on children's living arrangements and orphanhood is presented in Table 2.3.

In Eritrea, 76 percent of children under age 15 live with both parents. The proportion of children living with both parents decreases with increasing age. Rural children are more likely to live with both parents than urban children. By residence, the percentage of children who live with both parents is lowest in Asmara and, among zobas, in zoba Maekel. Eighteen percent of children live with only one parent—

Table 2.3 Children's living arrangements and orphanhood

Percent distribution of de jure children under age 15 by children's living arrangements and survival status of parents, according to background characteristics, Eritrea 2002

Background characteristic	Living with both parents	Living with mother but not father		Living with father but not mother		Not living with either parent				Missing information on father/ mother	Total	Number of children
		Father alive	Father dead	Mother alive	Mother dead	Both alive	Only father alive	Only mother alive	Both dead			
Age												
<2	84.9	13.4	0.8	0.0	0.1	0.4	0.1	0.0	0.0	0.3	100.0	2,274
2-4	82.7	11.8	1.9	0.2	0.6	1.3	0.9	0.1	0.1	0.4	100.0	3,790
5-9	77.3	9.9	4.0	0.8	1.9	3.0	1.6	0.4	0.7	0.5	100.0	7,026
10-14	67.3	8.4	10.2	1.2	3.0	4.2	1.8	1.5	1.6	0.9	100.0	6,343
Sex												
Male	76.7	10.3	5.0	0.7	1.8	2.5	1.2	0.5	0.8	0.5	100.0	9,849
Female	75.2	10.1	5.4	0.7	1.8	3.0	1.5	0.7	0.8	0.7	100.0	9,582
Residence												
Total urban	67.6	16.1	6.2	1.2	1.3	3.5	1.2	1.1	1.0	0.9	100.0	6,462
Asmara	63.9	16.7	7.9	1.2	1.8	3.3	1.2	1.5	1.0	1.5	100.0	2,594
Other towns	70.1	15.6	5.0	1.2	1.0	3.7	1.2	0.8	1.0	0.4	100.0	3,868
Rural	80.1	7.3	4.8	0.5	2.1	2.4	1.4	0.4	0.6	0.5	100.0	12,970
Zoba												
Debubawi Keih Bahri	71.3	11.7	7.1	1.1	1.8	3.5	1.2	0.9	1.0	0.5	100.0	550
Maekel	69.1	13.5	7.2	1.1	1.4	3.3	1.0	1.2	0.8	1.4	100.0	3,654
Semenawi Keih Bahri	78.4	9.4	5.0	0.6	1.9	1.5	1.7	0.5	0.6	0.3	100.0	2,527
Anseba	82.4	6.2	3.2	0.5	2.3	2.7	1.5	0.5	0.6	0.1	100.0	2,836
Gash-Barka	77.1	8.0	5.9	0.5	2.8	1.9	2.3	0.2	1.0	0.2	100.0	3,626
Debub	75.8	11.5	4.5	0.8	1.2	3.4	0.9	0.6	0.7	0.6	100.0	6,241
Total 2002	**76.0**	**10.2**	**5.2**	**0.7**	**1.8**	**2.8**	**1.4**	**0.6**	**0.8**	**0.6**	**100.0**	**19,433**
Total 1995	71.8	11.8	6.4	1.0	2.7	2.8	1.1	0.8	0.7	0.9	100.0	11,269

Note: Total includes two children with missing information on sex.

15 percent with their mothers and 3 percent with their fathers. Seven percent of children live with only one parent because the other parent is dead. The proportion of children living with their father only because their mother is dead is higher in zoba Gash-Barka than in other zobas. Foster children—children not living with either parent—account for 6 percent of children under age 15 and orphaned children—children who have lost one or both parents—account for 10 percent. Among children age 10-14, one in six is an orphan.

A comparison of the last two rows in Table 2.3 shows that the proportion of children under 15 years who live with both of their parents has increased from 72 percent in 1995 to 76 percent in 2002. The proportion who live with their mothers only declined from 18 to 15 percent, and those who live with their fathers only decreased from 4 to 3 percent. The proportion of orphaned children decreased from 12 percent to 10 percent.

2.4 EDUCATION LEVELS OF THE HOUSEHOLD POPULATION

Education is a key determinant of the lifestyle and status an individual enjoys in society. It affects many aspects of life, including health, employment, marriage, and demographic behaviors. Studies have consistently shown that education has a strong effect on reproductive behavior, fertility, childhood mortality, morbidity, and contraceptive use, as well as attitudes and awareness related to family health and hygiene.

Educational Attainment of the Household Population

In the 2002 EDHS survey, information on educational attainment was collected for every member of the household age six years and above. Primary education in Eritrea starts at 7 years of age and continues until age 11; it is followed by two years for middle school, and an additional four years for secondary education. Table 2.4 shows the distribution of the de facto male and female household populations age six years and over by educational level, according to age, residence, and zoba.

Educational attainment at each age is higher for males than for females. Fifty-two percent of female household members have never attended school, compared with 39 percent of males. However, among the population with any schooling, about one-fourth of males as well females have completed at least primary school. The median number of years of schooling is 0.7 for males and 0.0 for females because the majority of women have never attended school.

Rapid increases in educational attainment for both sexes can be seen from the declining proportion without any formal education in successively younger age groups. For example, the proportion of women with no education decreases from 95 percent at age 65 and above to 21 percent at age 10-14. The higher proportions uneducated among those age 6-9 years for both sexes (51 percent and 54 percent for boys and girls, respectively) is mostly due to the inclusion of children age six in the age group; those children have not yet attended school. Officially, the minimum age for attending school in Eritrea is 7 years. There have been marked improvements since the 1995 EDHS in educational attainment among both males and females, but the differentials in 2002 show the same patterns by zoba, residence, and sex as in the past. For example, in 1995, the proportions of boys and girls age 10-14 who had never attended school were 32 percent and 40 percent, respectively, compared with 15 percent and 21 percent, respectively, in 2002.

Urban areas have a wide lead over rural areas in level of education attained. For example, 82 percent of males and 70 percent of females in urban areas have some education, compared with less than half of males (48 percent) and one-third of females in rural areas. Asmara, the most urbanized area in the country, has the highest proportion of males and females with some education (88 percent and 77 percent, respectively). The median number of years of schooling for urban males and urban females is 4.1 and 2.6, respectively, and 0.0 for both males and females in rural areas. By residence, the difference in the median number of years of schooling between males and females is highest in other towns (the median is 2.8 years for males and 1.1 years for females).

Educational attainment varies widely among zobas. The proportion of males and females with some education is lowest in zoba Gash-Barka (38 and 26 percent, respectively) and highest in zoba Maekel (86 and 76 percent, respectively). The median number of years of schooling for males is 4.7 years in zoba Maekel, much lower in zobas Debubawi Keih Bahri and Debub, and 0.0 in all other zobas. The median number of years for schooling is one year lower for females (3.7 years) than for males in zoba Maekel, and is 0.0 for females in all other zobas.

To determine the literacy level in the country, for each person age six and above, the question was asked if the person could read and write in any language without difficulty. More than half

Table 2.4 Educational attainment of the household population

Percent distribution of the de facto household populations age six and over by highest level of education attended or completed, median number of years of schooling, and percentage literate, by sex, according to background characteristics, Eritrea 2002

Background characteristic	Highest level of schooling attended or completed							Total	Number	Median number of years of schooling	Percentage literate
	No education	Some primary	Completed primary[1]	Some secondary	Completed secondary[2]	More than secondary	Don't know/ missing				
MALE											
Age											
6-9	50.8	47.7	0.0	0.0	0.0	0.0	1.5	100.0	2,940	0.0	31.5
10-14	14.7	80.6	1.1	3.4	0.0	0.1	0.1	100.0	3,024	2.0	79.5
15-19	12.3	47.4	3.2	33.7	1.9	1.4	0.1	100.0	2,072	5.3	86.7
20-24	20.1	27.1	3.8	30.2	9.5	8.5	0.7	100.0	751	6.3	81.4
25-29	19.7	25.1	1.5	21.0	19.7	12.3	0.7	100.0	528	7.0	81.4
30-34	37.8	21.0	2.9	11.6	17.5	8.4	0.8	100.0	503	3.9	67.1
35-39	47.0	22.3	3.0	10.5	10.8	6.2	0.2	100.0	430	1.6	60.8
40-44	54.5	20.6	1.9	7.3	7.6	7.1	1.0	100.0	536	0.0	54.7
45-49	49.6	25.3	3.0	7.6	7.2	6.6	0.7	100.0	473	0.0	59.6
50-54	58.8	20.3	2.2	6.9	4.8	5.6	1.4	100.0	648	0.0	49.6
55-59	63.1	19.5	1.3	5.5	4.2	5.3	1.0	100.0	480	0.0	46.3
60-64	74.2	15.8	1.5	2.2	3.1	1.7	1.6	100.0	605	0.0	34.5
65+	82.4	12.9	0.3	1.1	0.8	0.7	1.7	100.0	1,319	0.0	31.4
Residence											
Total urban	18.2	45.4	2.8	18.0	8.1	6.3	1.3	100.0	5,370	4.1	80.7
Asmara	10.4	42.2	2.6	18.9	12.3	11.5	2.1	100.0	2,420	5.5	88.9
Other towns	24.6	48.1	2.9	17.2	4.6	2.0	0.6	100.0	2,950	2.8	73.9
Rural	51.6	40.7	0.8	5.0	0.8	0.5	0.6	100.0	8,951	0.0	46.7
Zoba											
Debubawi Keih Bahri	37.6	37.8	2.8	9.8	8.4	2.5	1.0	100.0	410	1.7	60.0
Maekel	13.8	45.3	2.4	18.0	9.6	9.0	2.0	100.0	3,186	4.7	85.0
Semenawi Keih Bahri	52.7	37.6	2.2	4.7	1.4	0.8	0.7	100.0	1,893	0.0	48.1
Anseba	45.7	44.2	1.3	5.6	2.5	0.4	0.4	100.0	2,028	0.0	52.3
Gash-Barka	61.7	30.4	1.2	4.7	0.8	0.6	0.5	100.0	2,700	0.0	37.5
Debub	34.4	50.1	0.8	11.6	1.6	1.0	0.4	100.0	4,105	0.7	62.8
Total	39.1	42.5	1.6	9.9	3.5	2.7	0.8	100.0	14,321	0.7	59.4
FEMALE											
Age											
6-9	53.8	44.6	0.1	0.0	0.0	0.0	1.5	100.0	2,825	0.0	28.7
10-14	21.3	74.0	1.1	3.5	0.0	0.0	0.2	100.0	3,092	1.9	73.4
15-19	21.5	47.2	2.7	24.4	3.0	1.0	0.1	100.0	2,136	4.6	77.1
20-24	41.5	27.9	3.0	16.4	8.8	2.1	0.2	100.0	1,515	2.1	57.9
25-29	46.4	26.3	1.8	12.9	9.7	2.7	0.2	100.0	1,618	1.2	53.5
30-34	65.7	19.1	0.9	5.4	7.4	1.2	0.4	100.0	1,130	0.0	35.6
35-39	65.5	20.4	1.2	4.8	6.3	1.7	0.1	100.0	1,105	0.0	34.4
40-44	72.8	15.7	1.1	3.7	3.8	2.7	0.3	100.0	845	0.0	27.0
45-49	79.5	14.9	1.4	1.5	1.7	0.5	0.5	100.0	753	0.0	20.5
50-54	78.7	12.7	0.5	1.6	1.2	1.3	4.0	100.0	750	0.0	19.6
55-59	85.4	10.0	0.0	1.7	0.5	0.4	2.0	100.0	616	0.0	12.1
60-64	91.0	4.7	0.2	0.9	0.0	0.3	2.9	100.0	684	0.0	5.9
65+	95.0	2.1	0.3	0.2	0.2	0.0	2.3	100.0	1,178	0.0	3.3
Residence											
Total urban	30.2	41.8	2.3	14.7	7.3	2.3	1.4	100.0	7,259	2.6	65.6
Asmara	20.6	38.3	2.7	20.7	11.7	3.6	2.3	100.0	3,525	4.7	75.3
Other towns	39.2	45.1	1.9	9.0	3.2	1.0	0.6	100.0	3,734	1.1	56.4
Rural	67.0	29.8	0.5	1.9	0.3	0.0	0.5	100.0	10,994	0.0	28.9
Zoba											
Debubawi Keih Bahri	54.8	28.9	2.5	8.3	4.1	0.4	1.0	100.0	567	0.0	41.6
Maekel	23.9	41.0	2.5	18.1	9.3	2.9	2.3	100.0	4,506	3.7	72.0
Semenawi Keih Bahri	69.2	26.4	1.0	1.9	1.1	0.1	0.3	100.0	2,216	0.0	28.0
Anseba	60.2	34.2	0.7	3.5	1.0	0.0	0.5	100.0	2,368	0.0	36.6
Gash-Barka	74.2	23.1	0.6	1.5	0.4	0.1	0.1	100.0	3,179	0.0	22.0
Debub	52.7	40.0	0.7	4.5	1.1	0.6	0.5	100.0	5,417	0.0	41.9
Total	52.4	34.5	1.2	7.0	3.1	0.9	0.9	100.0	18,253	0.0	43.5

Note: Total includes 8 females and 13 males with missing information on age, who are not shown separately.
[1] Completed 5 grade at the primary level
[2] Completed 11 grades at the secondary level

(51 percent) of the population are literate. There is a significant difference in the literacy level by sex. Overall, 59 percent of males and 44 percent of females are literate. There are marked differentials in the literacy level by residence. Eight in ten males and almost two-thirds of females in urban areas are literate, compared with less than half (47 percent) of males and less than one-third (29 percent) of females in rural areas.

School Attendance Ratios

Information on the net attendance ratio (NAR), gross attendance ratio (GAR), and gender parity index (GPI) by school level, according to sex, residence, zoba, and wealth index is shown in Tables 2.5.1-2.5.3. The NAR indicates participation in primary schooling for the population age 7-11, in middle schooling for the population age 12-13, and in secondary schooling for the population age 14-17. The GAR measures participation at each level of schooling among population age 6-24. If there are significant numbers of overage and underage students at a given level of schooling, the GAR can exceed 100 percent. The GPI at a given school level is defined as the ratio of the GAR for females to the GAR for males, and indicates the magnitude of the gender gap in attendance ratios. If there is no gender difference, the GPI will be equal to 1, whereas the wider the disparity in favor of males, the closer the gap will be to zero. If the gender gap favors females, the GPI exceeds 1.

Table 2.5.1 Primary school attendance ratios

Primary school net attendance ratios (NAR), gross attendance ratios (GAR), and the gender parity index for the de jure household population age 7-11, by sex, according to background characteristics, Eritrea 2002

Background characteristic	Net attendance ratio [1]			Gross attendance ratio [2]			Gender parity index [3]
	Male	Female	Total	Male	Female	Total	
Residence							
Total urban	79.4	80.6	80.0	112.3	121.4	116.6	1.08
Asmara	86.9	89.3	88.1	114.7	119.2	116.9	1.04
Other towns	75.1	75.0	75.1	110.9	122.9	116.5	1.11
Rural	54.7	49.7	52.3	103.0	82.3	92.9	0.80
Zoba							
Debubawi Keih Bahri	57.2	47.7	52.7	84.0	71.0	77.9	0.84
Maekel	85.4	89.6	87.5	117.8	121.5	119.7	1.03
Semenawi Keih Bahri	46.7	38.3	42.7	89.2	69.2	79.6	0.78
Anseba	57.2	49.3	53.3	111.9	85.7	98.8	0.77
Gash-Barka	42.7	37.8	40.4	84.7	70.9	78.1	0.84
Debub	72.4	69.8	71.1	118.9	110.3	114.8	0.93
Wealth index							
Lowest	43.6	33.8	39.0	93.6	63.9	79.4	0.68
Second	52.8	46.6	49.8	96.4	79.7	88.4	0.83
Middle	64.1	64.9	64.5	114.3	104.9	109.6	0.92
Fourth	81.9	81.6	81.7	120.9	120.2	120.6	0.99
Highest	85.3	86.4	85.8	113.5	121.3	117.0	1.07
Total	62.8	59.4	61.2	106.1	94.6	100.5	0.89

[1] Percentage of the primary-school-age (7-11 years) population that is attending primary school
[2] Total number of primary school students, expressed as a percentage of the official primary-school-age population.
[3] The gender parity index for primary school is the ratio of the primary school GAR for females to the GAR for males.

Table 2.5.2 Middle school attendance ratios

Middle school net attendance ratios (NAR), gross attendance ratios (GAR), and the gender parity index for the de jure household population age 12-13, by sex, according to background characteristics, Eritrea 2002

Background characteristic	Net attendance ratio[1]			Gross attendance ratio[2]			Gender parity index[3]
	Male	Female	Total	Male	Female	Total	
Residence							
Total urban	40.0	38.1	39.0	116.2	106.6	111.0	0.92
Asmara	49.6	54.7	52.3	121.1	133.6	127.7	1.10
Other towns	33.1	27.1	29.8	112.7	88.8	99.5	0.79
Rural	13.6	9.1	11.2	58.9	34.0	45.9	0.58
Zoba							
Debubawi Keih Bahri	31.8	28.1	29.8	76.3	63.7	69.5	0.84
Maekel	48.4	49.0	48.7	115.9	121.5	118.8	1.05
Semenawi Keih Bahri	14.3	10.7	12.3	92.4	29.9	57.0	0.32
Anseba	15.2	12.0	13.5	64.7	42.5	53.2	0.66
Gash-Barka	6.4	1.9	4.0	35.6	17.6	25.9	0.50
Debub	20.6	17.4	19.0	79.6	67.2	73.2	0.84
Wealth index							
Lowest	4.6	4.2	4.4	38.6	18.5	27.6	0.48
Second	9.4	5.5	7.4	59.4	30.5	44.3	0.51
Middle	19.8	12.2	15.8	83.4	42.3	61.6	0.51
Fourth	34.3	32.1	33.2	95.0	106.9	101.2	1.12
Highest	51.5	52.2	51.9	129.0	124.4	126.6	0.96
Total	22.7	19.6	21.1	78.6	60.4	68.9	0.77

[1] Percentage of the middle-school-age (12-13 years) population that is attending middle school
[2] Total number of middle school students, expressed as a percentage of the official middle-school-age population.
[3] The gender parity index for middle school is the ratio of the middle school GAR for females to the GAR for males.

Table 2.5.1 shows that more than six in ten (61 percent) primary-school-age children are currently attending primary school. Only one in five (21 percent) middle-school-age children is attending middle school (Table 2.5.2), while one in four (23 percent) secondary-school-age youths is attending secondary school (Table 2.5.3). The NAR is slightly higher among males than among females at each level. Attendance ratios are much lower in rural areas than in urban areas at all three levels of schooling.

Regarding variations by zoba, the NAR in zoba Maekel is the same for boys and girls at the middle-school level and the secondary-school level, but higher for girls than for boys at the primary-school level. In the other zobas, it is consistently higher for boys than for girls at each level. Net attendance ratios are lowest in zoba Gash-Barka and highest in zoba Maekel, followed by zoba Debub. There is a positive correlation between the wealth index[1] and attendance ratios for both sexes at each school level.

The GAR has a pattern similar to that of the NAR. The GAR is higher among males than females, at 106 and 95, respectively, at the primary level; 79 and 60, respectively, at the middle-school level; and

[1] The wealth index used in this analysis is discussed on page 19.

50 and 35, respectively, at the secondary-school level. The GPI for these levels is 0.89, 0.77, and 0.71, respectively, indicating that the deficit of females increases with level of education.

Table 2.5.3 Secondary school attendance ratios

Secondary school net attendance ratios (NAR), gross attendance ratios (GAR), and the gender parity index for the de jure household population age 14-17, by sex, according to background characteristics, Eritrea 2002

Background characteristic	Net attendance ratio [1]			Gross attendance ratio [2]			Gender parity Index [3]
	Male	Female	Total	Male	Female	Total	
Residence							
Total urban	44.4	36.6	40.4	87.1	61.1	73.6	0.70
Asmara	48.3	45.4	46.6	86.5	80.7	83.2	0.93
Other towns	41.9	28.0	35.3	87.4	42.0	65.9	0.48
Rural	13.4	8.4	11.3	27.2	12.4	20.9	0.46
Zoba							
Debubawi Keih Bahri	42.5	24.3	33.7	57.7	37.8	48.1	0.66
Maekel	42.6	42.6	42.6	78.6	72.3	75.2	0.92
Semenawi Keih Bahri	14.2	8.4	11.9	27.1	13.7	21.9	0.51
Anseba	16.1	13.2	15.0	33.8	21.5	28.8	0.64
Gash-Barka	9.4	4.8	7.4	29.3	7.2	19.9	0.25
Debub	28.6	16.3	22.9	56.5	24.3	41.7	0.43
Wealth index							
Lowest	7.0	2.0	5.1	14.5	4.4	10.7	0.30
Second	8.4	4.9	6.9	22.1	6.4	15.2	0.29
Middle	18.2	11.6	15.2	36.2	15.0	26.7	0.41
Fourth	45.2	29.4	37.4	91.9	46.5	69.4	0.51
Highest	47.5	45.2	46.3	85.4	78.3	81.6	0.92
Total	25.1	21.6	23.5	49.7	35.3	43.0	0.71

[1] Percentage of the secondary-school-age (14-17 years) population that is attending secondary school
[2] Total number of secondary school students, expressed as a percentage of the official secondary-school-population.
[3] The gender parity index for secondary school is the ratio of the secondary school GAR for females to the GAR for males.

The differentials in GAR and GPI by residence and zoba are small at the primary school level but become more pronounced as the level of education increases. At the middle school level, the total GAR is lower in rural areas than in urban areas and in zobas Semenawi Keih Bahri, Anseba, and Gash Barka than in other zobas. The lowest GAR is in zoba Gash-Barka (26). The GPI at the middle-school level ranges from 0.32 in zoba Semenawi Keih Bahri to 1.10 in Asmara, indicating that there is a huge deficit of females in the zoba, while females have a slight edge in school attendance in Asmara. The GAR and GPI at the secondary-school level are generally lower than at the middle-school level. The GPI is lowest for zoba Gash-Barka (0.25) and deficit of females is evident for all subgroups. The female deficit observed at the secondary-school level could be partly due to young women getting married and dropping out of school, especially in rural areas.

At the primary school level, for different levels of the wealth index the GAR varies from 79 to 117 and the GPI varies from 0.68 to 1.07. The differences by sex are small at the primary-school level. At higher levels of schooling, there is greater variation in the GAR and the GPI by wealth index. At the middle-school level, the total GAR increases from 28 to 127 going from the lowest to the highest quintile. The GPI is around 0.50 for the three lowest quintiles of the wealth index. Females from households in the

fourth quintile of the wealth index have a slight edge over males, and the deficit of females at the secondary-school level is even greater for the three lowest quintiles.

The wealth index used here is one recently developed and tested in a large number of countries in relation to inequities in household income, use of health services, and health outcomes (Rutstein, Johnson, and Gwatkin, 2000). It is an indicator of wealth that is consistent with expenditure and income measures (Rutstein, 1999).

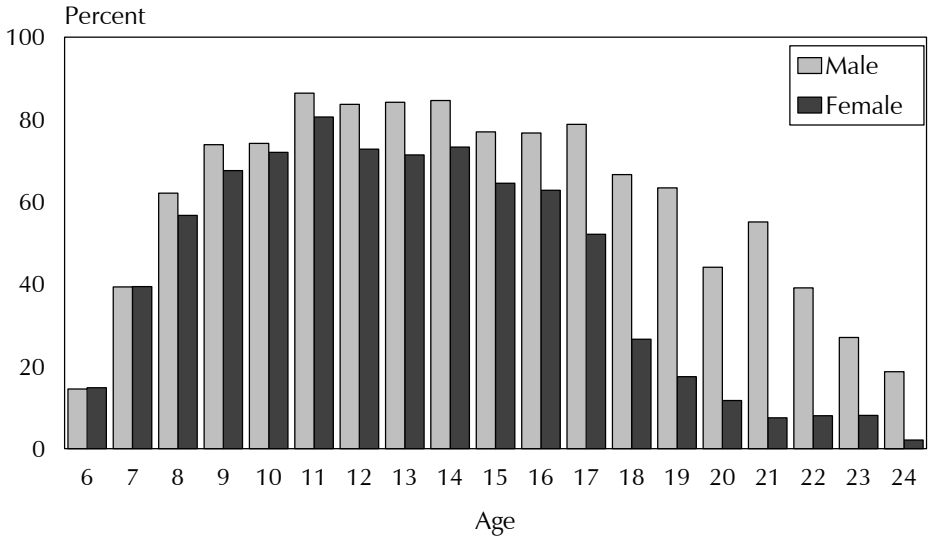
The wealth index was constructed using household asset data (including country-specific assets) and principal components analysis. The asset information was collected through the 2002 EDHS Household Questionnaire, and covers information on household ownership of a number of consumer items ranging from a television to a bicycle or car, as well as dwelling characteristics such as source of drinking water, sanitation facilities, and type of material used in flooring.

Each asset was assigned a weight (factor score) generated through principal components analysis, and the resulting asset scores were standardized in relation to a standard normal distribution with a mean of zero and a standard deviation of one (Gwatkin et al., 2000). Each household was then assigned a score for each asset, and the scores were summed for each household; individuals were ranked according to the total score of the household in which they resided. The sample was then divided into population quintiles; each quintile was designated a rank, from one (lowest) to five (highest).

Current School Attendance

The age-specific attendance rates (ASARs) for the population age 6-24 by single year and sex are shown in Figure 2.3. The ASAR indicates school attendance at any level, from primary to higher levels of education. Although the minimum age for schooling in Eritrea is 7 years, there are some children attending school at younger ages. A majority of children are not attending school at age 7. The peak attendance is at age 11 when 86 percent of boys and 82 percent of girls are currently attending school. The male-female disparity in attending school is small at younger ages (in favor of males). However,

Figure 2.3
Age-Specific Attendance Rates



Note: Figure shows percentage of the de jure household population age 6-24 years attending school.

EDHS 2002

differentials by sex in school attendance become wider beginning at age 17. For example, one in five males age 24 is attending school, compared with only one in 50 females.

2.5 MARITAL STATUS

The 2002 EDHS includes information on the marital status of all household members age 15 and above. Table 2.6 shows the current marital status of the de facto household population by age, sex, and residence. In this report, ‘‘marriage’’ refers to both formal and informal unions. An informal union is one in which the man and woman live together for some time, intending to have a lasting relationship, but do not have a formal civil, cultural or religious marriage ceremony. Among females age 15 and above, 62 percent are currently married and 19 percent have never been married. The proportion never married is much higher among males (39 percent) than among females (19 percent), and is higher in urban areas (46 percent for males and 28 percent for females) than in rural areas (34 percent for males and 12 percent for females). Percentages currently divorced and separated are generally small, regardless of age, sex, and place of residence. One in eight women age 15 and above in urban areas and rural areas is currently widowed, compared with 2-3 percent of men. By age group, the percentage of women widowed is small except at older ages (age 40 and above). For example, among women age 50 and above in both urban areas and rural areas, more than two in ten women are widowed. The higher percentage of older woman than men who are widowed reflects sex differentials in age at marriage, longevity, and remarriage rates. A discussion of marital patterns among women age 15-49 is contained in Chapter 6.

Table 2.6 Marital status of the de facto household population

Percent distribution of the de facto household population age 15 and above by marital status, according to age, residence and sex, Eritrea 2002

Characteristic	Current marital status						Missing	Total	Number of women
	Never married	Married	Living together	Widowed	Divorced	Not living together			
URBAN									
Male									
15-19	98.0	0.5	0.0	0.0	0.0	0.0	1.5	100.0	889
20-24	92.4	3.7	1.2	0.0	1.0	0.0	1.7	100.0	315
25-29	73.0	24.1	1.8	0.0	1.0	0.0	0.0	100.0	277
30-34	38.7	55.6	3.9	0.0	0.8	0.0	1.0	100.0	243
35-39	21.0	70.8	4.1	0.8	2.2	1.1	0.0	100.0	184
40-44	8.1	85.0	3.1	2.4	0.7	0.1	0.5	100.0	209
45-49	4.4	90.3	3.0	1.0	1.4	0.0	0.0	100.0	207
50+	1.6	90.6	1.6	2.1	2.3	0.0	1.7	100.0	240
Total	45.6	48.8	1.4	1.8	1.3	0.2	0.9	100.0	3,386
Female									
15-19	88.5	10.0	0.5	0.0	0.7	0.2	0.1	100.0	988
20-24	48.9	42.0	3.1	0.4	3.4	2.1	0.0	100.0	662
25-29	21.8	63.3	5.0	2.4	5.5	1.8	0.2	100.0	749
30-34	9.2	68.3	4.5	4.5	9.1	3.7	0.7	100.0	447
35-39	4.4	76.1	3.5	4.2	9.4	2.1	0.2	100.0	481
40-44	2.5	71.6	2.6	12.1	5.1	6.2	0.0	100.0	313
45-49	1.5	61.1	4.5	14.8	15.0	2.7	0.4	100.0	280
50+	4.2	59.0	0.5	21.1	13.1	1.7	0.3	100.0	360
Total	28.0	48.7	2.5	12.0	6.4	2.0	0.4	100.0	5,234
RURAL									
Male									
15-19	96.3	2.3	0.1	0.1	0.2	0.0	1.0	100.0	1,183
20-24	80.4	17.9	0.0	0.4	0.7	0.0	0.6	100.0	436
25-29	47.8	47.3	2.1	0.9	0.9	0.5	0.4	100.0	250
30-34	12.1	82.1	1.3	1.2	3.3	0.0	0.0	100.0	260
35-39	7.0	86.3	2.0	1.2	2.9	0.0	0.5	100.0	245
40-44	2.5	92.3	0.0	2.3	2.0	0.0	1.0	100.0	326
45-49	2.6	91.5	0.5	3.8	1.6	0.0	0.0	100.0	266
50+	1.0	93.2	0.7	3.0	2.1	0.1	0.0	100.0	415
Total	33.9	60.6	0.6	3.1	1.3	0.1	0.4	100.0	4,971
Female									
15-19	52.7	43.5	0.5	0.0	2.1	0.4	0.8	100.0	1,148
20-24	14.2	77.4	0.9	1.0	4.5	1.5	0.5	100.0	853
25-29	4.9	83.2	1.8	0.9	7.7	1.0	0.4	100.0	868
30-34	2.2	85.9	1.6	3.3	5.7	1.3	0.0	100.0	682
35-39	1.6	83.0	2.9	5.1	5.7	1.8	0.0	100.0	624
40-44	0.4	84.8	0.9	9.4	4.1	0.4	0.0	100.0	532
45-49	0.6	79.0	1.8	10.9	6.4	1.3	0.0	100.0	473
50+	0.8	67.9	0.8	22.3	7.4	0.3	0.5	100.0	394
Total	11.5	68.2	1.1	12.8	5.2	0.9	0.3	100.0	7,103
TOTAL									
Male									
15-19	97.0	1.5	0.1	0.1	0.1	0.0	1.2	100.0	2,072
20-24	85.4	11.9	0.5	0.2	0.9	0.0	1.0	100.0	751
25-29	61.1	35.1	2.0	0.4	1.0	0.2	0.2	100.0	528
30-34	25.0	69.3	2.6	0.6	2.1	0.0	0.5	100.0	503
35-39	13.0	79.7	2.9	1.0	2.6	0.5	0.3	100.0	430
40-44	4.7	89.4	1.2	2.4	1.5	0.0	0.8	100.0	536
45-49	3.4	91.0	1.6	2.6	1.5	0.0	0.0	100.0	473
50+	1.2	92.2	1.0	2.7	2.2	0.0	0.6	100.0	655
Total	38.6	55.8	0.9	2.6	1.3	0.1	0.6	100.0	8,357
Female									
15-19	69.3	28.0	0.5	0.0	1.4	0.3	0.5	100.0	2,136
20-24	29.4	61.9	1.9	0.7	4.1	1.7	0.3	100.0	1,515
25-29	12.8	74.0	3.3	1.6	6.7	1.4	0.3	100.0	1,618
30-34	5.0	79.0	2.7	3.7	7.0	2.3	0.3	100.0	1,130
35-39	2.8	80.0	3.2	4.7	7.3	1.9	0.1	100.0	1,105
40-44	1.2	79.9	1.5	10.4	4.5	2.5	0.0	100.0	845
45-49	1.0	72.4	2.8	12.4	9.6	1.8	0.1	100.0	753
50+	2.4	63.7	0.7	21.7	10.1	1.0	0.4	100.0	754
Total	18.5	59.9	1.7	12.5	5.7	1.4	0.4	100.0	12,337

2.6 EMPLOYMENT STATUS OF HOUSEHOLD POPULATION

Tables 2.7.1 and 2.7.2 show the distribution of household populations of females and males age 10 and above by employment status and type of earnings, according to background characteristics. Sixty-nine percent of males and 16 percent of females age 15 years and above were employed in the month before the survey and are considered currently employed. The proportions for males and females age 15-64 employed are 72 percent and 17 percent, respectively. The proportion currently employed peaks at age 30-34 for males (93 percent) and at age 25-29 for females (26 percent). For both sexes, there is a moderate decline in employment at age 60 and above. However, remarkably, almost half of males age 65 and above were employed the month before the survey. Tables 2.7.1 and 2.7.2 show that overall, the vast majority of children age 10-14 attend school, and only a small proportion were employed in the month before the survey. Children's employment varies by sex; boys are more likely to be employed than girls (4 percent and 1 percent, respectively). Around four in ten persons age 10-14 are not paid for their work.

Table 2.7.1 Employment status: women

Percent distribution of the de jure female household population age 10 and over by employment status and type of earnings, according to background characteristics, Eritrea 2002

	Employment status						Type of earnings						
Background characteristic	Not employed, in school	Not employed in past month	Employed in past month	Missing	Total	Number of women	Cash	In-kind	Both cash and in-kind	Not paid	Missing	Total	Total employed women
Age													
10-14	69.7	24.2	1.3	4.9	100.0	3,185	40.5	7.0	2.3	39.4	10.8	100.0	41
15-19	43.2	47.0	9.1	0.7	100.0	2,247	80.1	3.6	0.7	12.9	2.7	100.0	205
20-24	7.2	69.5	22.7	0.6	100.0	1,660	86.0	1.4	0.7	11.0	0.8	100.0	377
25-29	0.0	73.5	25.7	0.8	100.0	1,719	86.6	1.1	1.0	8.6	2.7	100.0	442
30-34	0.0	80.8	18.7	0.4	100.0	1,172	81.8	2.4	2.5	12.2	1.2	100.0	220
35-39	0.0	77.8	21.7	0.5	100.0	1,135	81.7	3.5	4.5	10.2	0.0	100.0	247
40-44	0.0	82.8	16.8	0.3	100.0	878	81.2	3.4	2.2	9.5	3.7	100.0	148
45-49	0.0	80.8	19.0	0.2	100.0	783	76.7	3.2	7.0	13.0	0.0	100.0	149
50-54	0.0	83.3	16.2	0.5	100.0	796	79.9	5.7	4.4	8.9	1.0	100.0	129
55-59	0.0	88.5	10.5	1.0	100.0	650	78.3	6.3	5.8	9.7	0.0	100.0	68
60-64	0.0	92.5	5.9	1.6	100.0	715	75.0	2.7	5.3	17.0	0.0	100.0	42
65+	0.0	93.4	5.4	1.2	100.0	1,220	75.8	8.5	5.6	8.5	1.6	100.0	66
Residence[1]													
Urban	14.1	57.5	27.5	0.9	100.0	5,072	89.5	1.6	0.6	6.8	1.4	100.0	1,394
Asmara	13.7	52.7	32.3	1.3	100.0	2,596	90.4	0.6	0.1	7.2	1.6	100.0	840
Other towns	14.5	62.6	22.4	0.6	100.0	2,476	88.1	3.2	1.4	6.2	1.1	100.0	554
Rural	5.7	84.4	9.5	0.4	100.0	6,684	67.7	4.9	6.6	19.2	1.6	100.0	634
Zoba[1]													
Debubawi Keih Bahri	7.4	58.1	34.4	0.2	100.0	409	58.8	0.6	0.3	40.2	0.1	100.0	141
Maekel	13.6	55.3	30.0	1.1	100.0	3,202	89.0	1.2	0.3	7.5	1.9	100.0	961
Semenawi Keih Bahri	5.5	84.1	9.4	0.9	100.0	1,458	84.4	4.5	1.3	9.8	0.0	100.0	138
Anseba	10.8	82.2	6.9	0.1	100.0	1,421	76.8	4.0	13.3	4.9	1.0	100.0	98
Gash-Barka	3.5	83.9	11.9	0.7	100.0	2,012	81.9	1.6	5.2	9.1	2.3	100.0	239
Debub	9.9	76.0	13.8	0.3	100.0	3,255	77.6	6.1	4.5	10.6	1.1	100.0	451
Population age 10+	20.5	64.8	13.2	1.5	100.0	16,170	81.6	2.9	2.6	11.2	1.7	100.0	2,134
Population age 15+	8.4	74.8	16.1	0.7	100.0	12,986	82.4	2.9	2.6	10.6	1.5	100.0	2,093
Population age 10-64	22.1	62.5	13.8	1.6	100.0	14,941	81.8	2.8	2.5	11.3	1.7	100.0	2,068
Population age 15-64	9.3	72.8	17.2	0.6	100.0	11,756	82.7	2.7	2.5	10.7	1.5	100.0	2,028

Note: The populations age 10 and over and age 15 and over include 9 women with missing information on age.
[1] Based on women age 15-64

Table 2.7.2 Employment status: men

Percent distribution of the de jure male household population age 10 and over by employment status and type of earnings, according to background characteristics, Eritrea 2002

Background characteristic	Employment status						Type of earnings						Total employed men
	Not employed, in school	Not employed in past month	Employed in past month	Missing	Total	Number of men	Cash	In-kind	Both cash and in-kind	Not paid	Missing	Total	
Age													
10-14	76.7	15.5	3.9	3.9	100.0	3,158	31.2	13.1	7.8	43.8	4.1	100.0	122
15-19	63.2	13.4	23.0	0.5	100.0	2,416	60.4	5.1	11.8	21.2	1.5	100.0	555
20-24	19.7	11.4	68.5	0.4	100.0	1,539	76.9	1.1	6.0	13.3	2.8	100.0	1,054
25-29	0.0	10.5	89.2	0.3	100.0	1,424	77.4	1.3	4.5	14.3	2.5	100.0	1,270
30-34	0.0	6.7	93.2	0.1	100.0	1,166	79.2	1.4	8.4	9.8	1.2	100.0	1,087
35-39	0.0	8.0	91.9	0.1	100.0	910	79.6	1.5	9.6	8.3	1.0	100.0	836
40-44	0.0	8.5	91.4	0.1	100.0	898	72.2	4.5	12.7	8.4	2.1	100.0	821
45-49	0.0	10.0	90.0	0.0	100.0	704	71.9	5.3	13.3	8.3	1.2	100.0	633
50-54	0.0	12.9	87.1	0.0	100.0	814	61.8	7.3	21.3	8.3	1.4	100.0	709
55-59	0.0	13.9	86.1	0.0	100.0	567	54.3	11.2	21.8	11.6	1.0	100.0	489
60-64	0.0	24.8	75.2	0.0	100.0	673	47.0	11.3	27.7	11.9	2.1	100.0	506
65+	0.0	52.2	47.5	0.3	100.0	1,427	36.3	14.9	32.2	13.7	2.8	100.0	678
Residence[1]													
Urban	19.2	10.9	69.6	0.3	100.0	4,568	85.0	0.9	1.3	11.0	1.7	100.0	3,179
Asmara	14.6	12.2	72.7	0.5	100.0	2,217	82.2	0.3	0.0	14.9	2.6	100.0	1,613
Other towns	23.5	9.6	66.6	0.2	100.0	2,352	88.0	1.5	2.7	7.1	0.7	100.0	1,566
Rural	14.6	12.2	73.1	0.1	100.0	6,542	61.5	6.0	18.8	11.7	1.9	100.0	4,781
Zoba[1]													
Debubawi Keih Bahri	10.7	11.9	77.2	0.2	100.0	345	77.7	0.1	0.2	21.4	0.7	100.0	266
Maekel	16.2	12.1	71.4	0.4	100.0	2,810	80.4	0.9	0.4	15.4	2.9	100.0	2,005
Semenawi Keih Bahri	16.5	12.9	70.3	0.3	100.0	1,327	67.7	6.1	15.9	8.7	1.6	100.0	933
Anseba	18.5	11.0	70.5	0.0	100.0	1,436	64.7	0.8	30.3	3.1	1.1	100.0	1,013
Gash-Barka	11.5	13.3	74.9	0.2	100.0	2,150	59.1	5.7	22.9	10.1	2.1	100.0	1,611
Debub	19.9	9.9	70.1	0.2	100.0	3,042	74.5	6.6	5.2	12.7	1.0	100.0	2,131
Population age 10+	27.1	16.2	55.8	1.0	100.0	15,710	67.7	5.0	13.4	12.1	1.9	100.0	8,765
Population age 15+	14.6	16.3	68.9	0.2	100.0	12,552	68.2	4.8	13.5	11.6	1.9	100.0	8,642
Population age 10-64	29.8	12.5	56.6	1.0	100.0	14,268	70.3	4.1	11.8	11.9	1.8	100.0	8,082
Population age 15-64	16.5	11.7	71.6	0.2	100.0	11,110	70.9	4.0	11.9	11.5	1.8	100.0	7,960

Note: The populations age 10 and over and age 15 and over include 15 men with missing information on age.
[1] Based on men age 15-64

Differentials in employment status by residence and zoba are examined for persons age 15-64, the age considered economically active in Eritrea. There is a slight difference in the level of current employment for males by urban-rural residence, with rural males more likely to be employed than urban males. However, rural males and males living in Asmara have the same level of employment (73 percent). In contrast, females are almost three times as likely to be employed in urban areas as in rural areas. However, females are also most likely to be employed in Asmara than in other areas. By zoba, the highest levels of both female and male employment are in zoba Debubawi Keih Bahri (34 percent and 77 percent, respectively). The differentials by zoba in male employment are small; at least 70 percent of males are employed in all zobas. The differentials in female employment are marked: one-third of females in Debubawi Keih Bahri are currently employed, compared with only 7 percent in Anseba. A substantial majority of employed females and males age 15-64 reported that they earn only cash (83 percent and 71 percent, respectively), and 3 percent of females and 12 percent of males reported that they receive cash

plus some payment in kind. Men and women employed in rural areas and in zobas Anseba and Gash-Barka are more likely to be paid in cash and in-kind than other men and women. Thus, there are only small differences in the proportion of employed persons receiving some cash by residence and zoba.

2.7 HOUSING CHARACTERISTICS

In the Household Questionnaire, respondents were asked about characteristics of their households, including access to electricity, source of drinking water, time to water source, time at water source, type of toilet facilities, fuel used for cooking, main flooring material, and number of rooms used for sleeping. Table 2.8 summarizes this information by residence.

In Eritrea, 32 percent of the households have electricity, a substantial increase from 23 percent in 1995. However, there has been almost no increase in households with electricity in rural areas. Only 3 percent of rural households have electricity, compared with 78 percent of urban households—almost all households in Asmara and 61 percent of households in other towns.

Information on a household's source of drinking water is important because potentially fatal diseases including typhoid, cholera, and dysentery are prevalent in unprotected water sources. Sources of water expected to be relatively free of these diseases are piped water, water drawn from protected wells, and water delivered by tanker trucks. Piped water is mainly accessible in urban areas; seven in ten households in Asmara, more than six in ten in other towns, and 18 percent (all from public tap) in rural areas use piped water. Around one-fourth of households in Asmara and other towns depend on tanker trucks to deliver water. More than half of households in rural areas have access to public wells (half of them protected and the other half unprotected) and 17 percent use spring water. Overall, half of rural households have access to clean water.

The accessibility to water is reflected by the time required to get to the water source. At least 50 percent of urban households have water available in the dwelling or yard and 69 percent are within 15 minutes of a water source. In contrast, only 8 percent of rural households are within 15 minutes to a water source, and more than half spend at least an hour to reach water. Respondents were asked about the waiting time at the source of water, excluding the time to go to and come back from the water source. For 57 percent of households there is no wait at the water source. But one in nine households in urban areas and almost one in four households in rural areas wait at least an hour at the water source.

Access to adequate sanitation facilities is an important determinant of health conditions. Three-fourths of households in Eritrea, and almost all households in rural areas (96 percent) have no toilet facility. Half of the households in other towns and slightly more than one-fourth of those in Asmara also do not have any toilet facility. Figure 2.4 shows that since 1995 access to flush toilets in Eritrea has increased from 12 percent to 17 percent, mainly because of better toilet facilities in other towns.

Several types of fuel are used for cooking in Eritrea. More than half of the households (59 percent) use wood or straw for cooking, 28 percent use kerosene, and 5 percent each depend on animal dung cake**s** and gas. Regarding urban-rural variation, wood or straw is more commonly used for cooking in rural areas (82 percent) than in urban areas (23 percent). In Asmara, most households use either kerosene (70 percent) or gas (22 percent) as fuel for cooking.

The type of material used for flooring is an indicator of the economic standing of the household as well as the potential exposure of household members to disease-causing agent. According to Table 2.8, two-thirds of households in Eritrea live in structures with floors made of earth, sand or dung, 20 percent have floors made of cement, and 13 percent have ceramic tile floors. The flooring material differs considerably by place of residence. Rural houses have poorer quality floors than urban houses (89 percent

Table 2.8 Household characteristics

Percent distribution of households by household characteristics, according to residence, Eritrea 2002

Characteristic	Urban			Rural	Total
	Total urban	Asmara	Other towns		
Electricity					
Yes	78.3	98.7	60.9	3.0	32.2
No	21.7	1.3	39.1	96.9	67.8
Total	100.0	100.0	100.0	100.0	100.0
Source of drinking water					
Piped into residence/yard/plot	41.9	56.9	29.0	0.1	16.3
Public tap	25.1	15.1	33.8	18.1	20.8
Unprotected well in dwelling/ yard/plot	0.1	0.0	0.2	0.6	0.4
Unprotected public well	2.1	0.0	3.9	24.7	15.9
Protected well in dwelling/ yard/plot	0.3	0.0	0.5	0.4	0.4
Protected public well	4.2	0.2	7.6	26.3	17.8
Spring	0.3	0.0	0.6	17.2	10.7
River, stream	0.2	0.0	0.3	4.8	3.0
Pond, lake	0.1	0.0	0.1	1.4	0.9
Dam	0.1	0.0	0.2	2.3	1.5
Tanker truck	25.5	27.7	23.6	3.8	12.2
Total	100.0	100.0	100.0	100.0	100.0
Time to water source					
Percentage <15 minutes	68.7	80.9	58.3	8.2	31.6
Median time to source	0.0	0.0	0.0	59.7	29.9
Normal wait at water source					
None	72.5	81.1	65.2	47.9	57.4
<5 min	0.4	0.6	0.3	0.0	0.2
5-14 min	3.7	2.7	4.7	4.2	4.0
15-29 min	5.4	3.1	7.5	7.8	6.9
30-44 min	6.3	4.1	8.1	15.4	11.9
45-59 min	0.6	0.4	0.7	0.7	0.7
60+ min	11.1	8.1	13.6	23.8	18.9
Total	100.0	100.0	100.0	100.0	100.0
Sanitation facility					
Own flush toilet	23.0	32.2	15.1	0.4	9.1
Shared flush toilet	18.8	29.6	9.5	0.3	7.5
Traditional pit toilet	15.6	8.4	21.7	1.3	6.8
Ventilated improved pit latrine	3.2	2.7	3.6	1.5	2.2
No facility, bush, field	39.4	27.0	50.1	96.4	74.3
Other	0.0	0.0	0.1	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0
Fuel used for cooking					
Gas	11.9	21.9	3.3	0.2	4.7
Electricity	1.6	3.0	0.4	0.0	0.6
Kerosene	58.2	70.3	47.9	8.9	28.0
Charcoal/coal	3.0	0.4	5.2	0.9	1.7
Wood, straw	23.4	3.0	41.0	82.1	59.4
Animal dung cakes	1.2	0.8	1.5	7.7	5.2
Other	0.5	0.4	0.6	0.1	0.2
Missing	0.2	0.3	0.1	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0

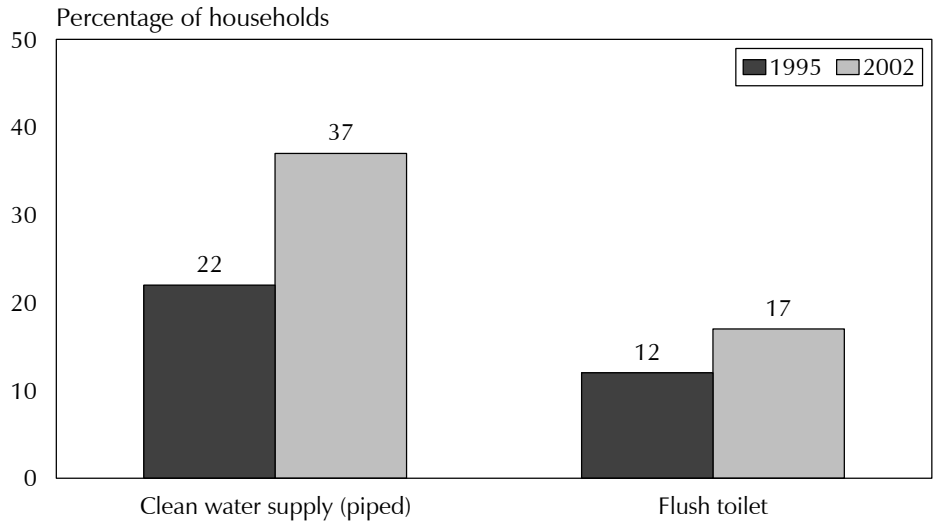
continued

Table 2.8 Household characteristics (cont.)

Percent distribution of households by household characteristics, according to residence, Eritrea 2002

Characteristic	Urban			Rural	Total
	Total urban	Asmara	Other towns		
Flooring material					
Earth, sand	31.6	12.6	47.9	75.4	58.5
Dung	1.3	0.3	2.1	13.5	8.7
Wood planks	0.1	0.1	0.0	0.0	0.0
Parquet, polished wood	0.1	0.1	0.0	0.0	0.0
Vinyl, asphalt strips	0.6	1.2	0.2	0.0	0.2
Ceramic tiles	30.6	50.1	13.9	1.2	12.6
Cement	35.3	35.3	35.4	9.8	19.7
Carpet	0.4	0.3	0.5	0.1	0.2
Total	100.0	100.0	100.0	100.0	100.0
Persons per room					
<3	40.8	46.5	36.0	26.0	31.7
3-4	32.7	28.6	36.3	33.8	33.4
5-6	16.7	15.1	18.1	22.5	20.3
7+	9.7	9.8	9.6	17.7	14.6
Total	100.0	100.0	100.0	100.0	100.0
Mean number of persons per room	3.4	3.2	3.5	4.2	3.9
Persons per sleeping room					
<3	31.8	36.3	27.9	21.8	25.7
3-4	36.5	34.6	38.2	33.3	34.6
5-6	20.0	18.0	21.8	24.4	22.7
7+	11.7	11.2	12.1	20.4	17.0
Total	100.0	100.0	100.0	100.0	100.0
Mean number of persons per sleeping room	3.8	3.6	3.9	4.5	4.2
Farm animals in living area	1.1	0.7	1.4	5.9	4.1
Wealth index					
Lowest	0.8	0.0	1.4	26.1	16.3
Second	3.2	0.0	5.9	31.3	20.4
Middle	9.6	0.1	17.7	29.4	21.7
Fourth	35.3	25.9	43.4	12.6	21.4
Highest	51.1	74.0	31.6	0.5	20.1
Total	100.0	100.0	100.0	100.0	100.0
Number of households	3,634	1,678	1,956	5,755	9,389

Figure 2.4
Access to Clean Water and Flush Toilet



EDHS 1995 and EDHS 2002

of rural households have earth, sand or dung floors, while 66 percent of urban houses have cement or ceramic tile floors). In Asmara, floors in half the households are made of ceramic tiles, one-third have cement floors, and one in ten has flooring made of lesser quality materials. Compared with the quality of flooring in 1995, some improvement is evident. For example, the proportion of households with floors made of earth or sand decreased from 69 to 59 percent, the proportion of households with floors made of ceramic tiles increased from 9 to 13 percent, and the proportion of households with cement floors more than doubled from 9 percent to 20 percent. The increase in households with floors made of cement is almost entirely due to improvement in housing in rural areas.

Information on the total number of rooms (excluding toilets and kitchens) and sleeping rooms was collected to measure household crowding. Overall, one-third of households have less than 3 persons per room and the same proportion have 3-4 persons per room. Crowding is more common in rural areas than urban areas. For example, 10 percent of the households in urban areas have 7 or more persons per room, compared with 18 percent in rural areas. The mean number of persons per room and per sleeping room in rural areas is 4.2 and 4.5, respectively; in urban areas, it is 3.4 and 3.8, respectively.

The presence of farm animals in the living area increases crowding, pollutes the living area, and exposes household members to disease-causing agents. In Eritrea, farm animals in the living area are not common; only 4 percent of households have farm animals in their living areas. The problem is more common among rural households (6 percent) than urban households (1 percent).

The wealth index is discussed in Section 2.4 (page 19). Table 2.8 shows that the proportion of households in the lowest quintile is 16 percent and the proportion of households in the other quintiles is nearly the same, 20-22 percent. Regarding differences by residence, more than half of urban households (51 percent) are in the highest quintile of the wealth index, compared with only 1 percent of rural households. This difference in wealth is a result of rural areas not having access to many of the amenities common in urban areas, such as electricity and piped water. In contrast, only 4 percent of urban households are in the two lowest quintiles of the wealth index. All households in Asmara are in the higher quintiles of the wealth index—three-fourths in the highest quintile and the remaining in the fourth

quintile. This is not surprising because of the concentration of amenities in the city (Table 2.8). Households in Asmara are also most likely to own various durable goods and transportation vehicles (Table 2.9).

2.8 HOUSEHOLD POSSESSIONS

Information on household possession of durable goods and means of transportation is presented in Table 2.9. Combined with other indicators, information on ownership of durable goods can be used to generate a wealth index that acts as a proxy estimate for the socioeconomic status of a household. Ownership of a radio or television is a measure of access to mass media; telephone ownership measures access to efficient communications; refrigerator ownership indicates a capacity for more hygienic storage. Bicycle, motorcycle, car, and donkey cart ownership reflects access to means of transportation. In general, ownership of these items has a bearing on the households' access to health information and services.

Possession of the durable goods mentioned above is not common in Eritrea. Six in ten households in Eritrea own a radio–81 percent of urban households and 43 percent of rural households. Radio ownership is almost universal in Asmara and very high in zoba Maekel. Less than half the households in zobas Anseba, Gash-Barka, and Semenawi Keih Bahri have radios. A household in zoba Gash-Barka is even less likely to have a radio than a household in rural areas. Basically, television is only in urban areas (34 percent), and zobas Maekel (46 percent) and Debubawi Keih Bahri (18 percent). Fifty-seven percent of households in Asmara have television. Overall, four in ten households in Eritrea have no television or radio.

Four percent of households have a telephone and 7 percent own a refrigerator. These amenities are almost exclusively in urban areas and zobas Maekel and Debubawi Keih Bahri. Regarding ownership of any means of transportation, 87 percent of the households do not own any means of transportation.

Table 2.9 Household durable goods

Percentage of households possessing various durable consumer goods and transport vehicles, by residence and zoba, Eritrea 2002

	Residence				Zoba						
Durable goods/vehicles	Total urban	Asmara	Other towns	Rural	Debubawi Keih Bahri	Maekel	Semenawi Keih Bahri	Anseba	Gash-Barka	Debub	Total
Durable consumer goods											
Radio	81.3	93.4	71.0	42.9	50.5	89.3	43.8	46.7	36.7	58.8	57.8
Television	33.6	57.4	13.2	0.3	17.6	46.2	4.5	4.6	0.6	3.0	13.2
Telephone	11.3	18.5	5.1	0.1	4.6	14.7	1.6	3.1	0.3	1.0	4.4
Refrigerator	18.2	25.7	11.8	0.1	35.2	20.4	4.5	2.5	0.8	0.9	7.1
No mass media[1]	18.1	6.0	28.6	57.1	47.9	10.1	56.0	53.2	63.2	41.2	42.0
Transport vehicles											
Donkey cart	1.9	1.4	2.3	0.4	0.6	1.6	0.2	0.2	2.4	0.3	1.0
Bicycle	19.4	29.0	11.2	4.9	6.2	29.6	2.4	3.8	2.4	8.0	10.5
Motorcycle	0.5	0.8	0.2	0.0	0.0	0.7	0.1	0.0	0.0	0.1	0.2
Car/truck	7.9	14.5	2.3	0.4	3.0	11.8	1.8	0.8	0.4	0.6	3.3
None of the above	73.9	60.7	85.2	94.6	90.6	62.0	95.9	95.6	95.7	91.3	86.6
Total	3,634	1,678	1,956	5,755	328	2,122	1,195	1,181	1,800	2,763	9,389

[1] No radio or television

Bicycles are the most common means of transportation; one in ten households owns a bicycle. Only 3 percent of households own a car or a truck. Not surprisingly, households in urban areas, in Asmara, and zoba Maekel are more likely to own durable consumer goods and means of transportation.

Ownership of durable consumer goods and means of transportation has increased since 1995. For example, the proportion of households with radios has increased from 40 to 58 percent and the proportion of households that have a bicycle has increased from 7 to 11 percent.

Respondents to the Household Questionnaire were asked whether they owned the house they lived in, whether they owned animals and cropland, and whether they grew cash crops. Seven in ten households own a house, 56 percent own cropland, and almost half of the households own animals (Table 2.10). Possession of livestock, a house, and cropland is more concentrated in rural areas than urban areas. For example, nine in ten rural households own a house, compared with only two in five urban households. Two-thirds of rural households own animals, half own horses, mules, or donkeys, four in ten own sheep or goats, and the same proportion own cattle or camels. Four percent of households in rural areas and 2 percent in other towns grow cash crop.

Table 2.10 Household ownership of a house, animals and cropland

Percentage of households owning a house, animals, and cropland, and percentage of households that grow cash crops, by residence, Eritrea 2002

Ownership	Total urban	Asmara	Other towns	Rural	Total
House	42.2	28.8	53.7	88.2	70.4
Any animals	12.6	1.2	22.4	68.8	47.0
Cattle or camel	5.2	0.9	9.0	41.6	27.5
Horse, mule, or donkey	7.4	0.8	13.0	49.5	33.2
Sheep or goat	6.9	0.3	12.6	38.9	26.6
Cropland	17.6	4.4	28.9	80.8	56.4
Grow cash crops	1.1	0.2	1.8	3.8	2.7
Total	3,634	1,678	1,956	5,755	9,389

2.9 MOSQUITO NETS

Malaria is endemic and is a major public health problem in Eritrea. Use of mosquito nets is one of the methods to prevent malaria. The global Roll Back Malaria (RBM) movement, which Eritrea endorsed, has set the framework within which the country is implementing malaria control. In the 2002 EDHS, information on the possession of mosquito nets by households was collected in the Household Questionnaire. Table 2.11 shows the distribution of households by number of mosquito nets, according to household characteristics. One-third of households reported owning at least one mosquito net. The likelihood of possessing at least two mosquito nets increases with household size. For example, one-fifth of large households (nine members or more) have at least two mosquito nets, compared with only 8 percent of households with three members.

Table 2.11 Household possession of mosquito nets

Percent distribution of households by number of mosquito nets present in household, percentage with at least one net, and mean number of nets per household, by household size, residence, and zoba, Eritrea 2002

Household characteristic	Number of mosquito nets in household				Total	Number of households	Percentage with at least one net	Mean number of mosquito nets per household (for households with mosquito nets)
	None	One	Two	Three or more				
Household size								
1	80.9	17.4	1.7	0.0	100.0	676	19.1	1.1
2	75.6	18.2	5.7	0.5	100.0	1,144	24.4	1.3
3	66.3	25.3	7.1	1.3	100.0	1,407	33.7	1.3
4	63.3	23.4	10.9	2.5	100.0	1,480	36.7	1.4
5	61.1	21.2	13.8	3.9	100.0	1,259	38.6	1.6
6	61.2	21.0	12.0	5.8	100.0	1,176	38.8	1.7
7	63.6	15.9	12.6	8.0	100.0	880	36.4	1.9
8	63.8	17.6	10.4	8.2	100.0	603	36.2	1.9
9+	64.9	16.2	10.9	8.0	100.0	763	35.1	2.0
Residence								
Urban	71.7	15.7	8.7	3.9	100.0	3,634	28.3	1.7
Asmara	91.2	6.5	1.9	0.3	100.0	1,678	8.8	1.3
Other towns	54.9	23.6	14.5	7.0	100.0	1,956	45.1	1.7
Rural	62.6	23.3	10.3	3.8	100.0	5,755	37.3	1.5
Zoba								
Debubawi Keih Bahri	71.4	19.5	6.8	2.3	100.0	328	28.6	1.4
Maekel	91.3	6.5	2.0	0.3	100.0	2,122	8.7	1.3
Semenawi Keih Bahri	57.3	23.0	13.3	6.5	100.0	1,195	42.6	1.7
Anseba	55.3	25.1	15.2	4.4	100.0	1,181	44.6	1.6
Gash-Barka	46.8	27.5	15.9	9.7	100.0	1,800	53.1	1.8
Debub	67.2	23.3	7.9	1.5	100.0	2,763	32.7	1.3
Total	66.1	20.3	9.7	3.8	100.0	9,389	33.8	1.6

Possession of mosquito nets is more common in rural areas (37 percent) than urban areas (28 percent), but it is most common in small towns (45 percent). Mosquito nets are less likely to be available in households in zoba Maekel than in the other zobas, probably because it is not a high-risk malaria area. Households in zobas Gash-Barka, Anseba, and Semenawi Keih Bahri are more likely to own at least one mosquito net than households in the other two zobas. Smaller households with one or two members (19-24 percent) are less likely to possess a mosquito net than larger households (34-39 percent). Among households with mosquito nets, the mean number of nets is 1.6. Although crowding is greater in rural areas (Table 2.2), the mean number of mosquito nets in rural households is smaller than in urban areas. The use of mosquito nets by women age 15-49 and by their children under age five is discussed in Chapter 9. Chapter 9 also discusses intermittent treatment for malaria among women age 15-49 during the last pregnancy ending in a live birth.

WOMEN'S CHARACTERISTICS AND STATUS 3

This chapter provides a demographic and socioeconomic profile of women of reproductive age who were interviewed in the 2002 EDHS. The information is essential for the interpretation of findings later in the report. The chapter starts by presenting a number of basic characteristics of women including age, marital status, residence, educational level, religion, ethnicity, and wealth status. Next, information on women's migration status, and more detailed information on educational attainment, literacy status, and the extent of exposure to mass media are provided. Finally, factors that enhance women's empowerment are explored, including employment status, occupation, earnings, and continuity of employment as well as women's participation in household decisionmaking and their attitudes toward wife beating.

3.1 CHARACTERISTICS OF SURVEY RESPONDENTS

Background characteristics of all women and currently married women age 15-49 interviewed in the 2002 EDHS are presented in Table 3.1. Reflecting the results of high fertility levels in the past, there are proportionally more younger than older women and the proportion of respondents in each age group generally declines as age increases for all women. Sixty-two percent of all women were currently married at the time of the survey, with an additional 4 percent in informal marriages ("living together"). About one-fourth of women age 15-49 have never married. Seven percent of women are divorced or separated, while 4 percent are widowed. In all other tables in this report, the categories "married" and "living together" are combined and referred to collectively as "currently married."

As expected, most women reside in rural areas (57 percent of all women and 66 percent of currently married women). Just over one-fifth of all women reside in Asmara, with the same proportion residing in other towns. The largest proportions of women live in three zobas: Debub (27 percent), Maekel (26 percent), and Gash-Barka (17 percent). Only 4 percent live in zoba Debubawi Keih Bahri. Similar distribution patterns by residence and zoba are observed for currently married women.

Table 3.1 shows that half of all women 15-49 have never attended school, while one-fifth have attained primary school only, one-tenth have attained middle school only, and one-fifth have been to secondary school or higher. As expected, currently married women are less likely to have attended school and less likely to have attained higher levels of education than the broader category of all women.

Improvements in female education are reflected at all levels of education. For example, the proportion of women age 15-49 who have attended secondary school doubled from 10 percent in 1995 to 20 percent in 2002. Similarly, the proportion of women with no education declined from 66 to 50 percent in the same period.

As regards religious affiliation, almost six in ten women (58 percent) are Orthodox, 37 percent are Muslim, and 5 percent are Catholic. Respondents are predominantly Tigrigna (62 percent of all women), followed by Tigre (22 percent). Since the wealth index classifies households into quintiles according to their assets and other economic characteristics, by definition there are roughly equal proportions of women falling into each category of the wealth index.

Table 3.1 Background characteristics of respondents

Percent distribution of all women and currently married women by background characteristics, Eritrea 2002

Background characteristic	All women			Currently married women		
		Number of women			Number of women	
	Weighted percent	Weighted	Un-weighted	Weighted percent	Weighted	Un-weighted
Age						
15-19	22.9	2,001	1,861	10.1	580	552
20-24	16.6	1,454	1,386	16.6	950	956
25-29	17.6	1,543	1,558	21.1	1,212	1,252
30-34	12.7	1,109	1,175	15.8	904	992
35-39	12.4	1,085	1,129	15.7	899	946
40-44	9.5	827	876	11.6	663	711
45-49	8.4	734	769	9.2	526	561
Marital status						
Never married	23.3	2,044	1,851	na	na	na
Married	61.8	5,409	5,682	94.4	5,409	5,682
Living together	3.7	324	288	5.6	324	288
Divorced/separated	7.4	650	592	na	na	na
Widowed	3.7	328	341	na	na	na
Residence						
Total urban	43.0	3,767	3,180	34.3	1,967	1,719
Asmara	21.7	1,899	1,123	15.1	868	505
Other towns	21.3	1,868	2,057	19.2	1,099	1,214
Rural	57.0	4,987	5,574	65.7	3,766	4,251
Zoba						
Debubawi Keih Bahri	3.7	324	1,470	3.7	210	1,005
Maekel	25.9	2,264	1,404	19.2	1,103	689
Semenawi Keih Bahri	13.1	1,148	1,416	14.3	817	1,027
Anseba	12.9	1,130	1,418	13.7	784	1,003
Gash-Barka	17.1	1,500	1,414	19.9	1,142	1,072
Debub	27.3	2,388	1,632	29.3	1,677	1,174
Education						
No education	50.1	4,384	5,098	61.9	3,549	4,126
Primary	18.7	1,637	1,506	18.8	1,075	961
Middle	11.1	974	831	7.0	400	340
Secondary +	20.1	1,760	1,319	12.4	709	543
Religion						
Orthodox	57.7	5,048	3,946	52.5	3,009	2,393
Catholic	4.6	400	390	4.0	228	228
Protestant	0.7	60	45	0.5	27	22
Muslim	36.5	3,198	4,319	42.6	2,443	3,293
Traditional believer	0.4	33	42	0.4	23	31
Other	0.1	12	8	0.0	0	0
Missing	0.1	5	4	0.0	3	3
Ethnicity						
Afar	2.9	254	1,033	3.0	174	752
Bilen	2.7	233	285	2.5	145	179
Hedarib	2.1	187	292	2.6	151	228
Kunama	1.5	132	135	1.3	77	80
Nara	2.0	174	142	2.2	124	101
Rashaida	0.5	47	72	0.6	36	55
Saho	3.6	313	324	4.5	257	266
Tigre	22.2	1,940	2,129	26.7	1,533	1,677
Tigrigna	61.9	5,422	4,218	55.9	3,206	2,546
Amhara	0.4	36	97	0.4	23	69
Other	0.2	17	27	0.1	9	17
Wealth index						
Lowest	16.8	1,472	1,709	20.3	1,161	1,342
Second	18.6	1,626	2,000	21.2	1,215	1,513
Middle	19.1	1,674	1,815	21.4	1,224	1,344
Fourth	20.9	1,833	1,404	18.8	1,079	832
Highest	24.6	2,149	1,826	18.4	1,053	939
Total	100.0	8,754	8,754	100.0	5,733	5,970

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.
na=Not applicable

3.2 WOMEN'S MIGRATION

In the 2002 EDHS, the migration status of women age 15-49 was determined on the basis of duration of continuous residence. Information on continuous residence was obtained by asking each woman the number of years she continuously lived in the place where she was living at the time of the survey. The duration of stay was recorded in completed years. From this information, it is possible to classify women as migrants or non-migrants. All women except those who have lived at the place of interview continuously since birth are considered migrants. Migrant women were asked whether they had lived in a city, town, or village just before they moved to the current place of residence and in which zoba they lived just before moving to the place of interview. Finally, they were asked the main reason for their move.

Table 3.2 shows that 54 percent of women can be considered migrants. As might be expected, older women are more likely to have moved than younger women. The percentage of migrants is higher among urban women (63 percent) than rural women (47 percent), though Asmara has a lower proportion of migrant women than other towns (56 vs. 70 percent). By zoba, the highest percentage of migrants is in zoba Debub (61 percent) and the lowest is in zoba Semenawi Keih Bahri (43 percent). Women with no education or only primary school are somewhat more likely to have moved than those with more education, most probably because they tend to be older. Women in the higher quintiles of the wealth index are generally more likely to have moved than women who are in the lower quintiles.

Table 3.2 indicates that the major reason for women's migration is marriage (41 percent). This reason is most common among migrant women who reside in rural areas (60 percent) and zoba Debub (61 percent), as well as those with no formal education (54 percent) and those who fall in the two lower wealth quintiles (60-61 percent). War-related reasons (war, insecurity, deportation, and internal displacement) are the next most frequently cited reason (14 percent) for migration, followed by employment (13 percent) and housing (11 percent). War-related reasons for moving are more commonly cited by teenage women, women in Gash-Barka, and those who have some secondary education. Employment is mentioned as the main reason for moving among urban women, women in zoba Debubawi Keih Bahri and women in the highest wealth quintile. Not surprisingly, the proportion of those migrating because of education is highest among migrants who are young (21 percent), those with secondary or higher education (18 percent), and those who moved to Asmara (11 percent) and zoba Maekel (10 percent).

The first column of Table 3.3 shows that the major type of female migration in Eritrea is rural-rural migration, which constitutes 40 percent of total migration. The next most common type of migration is urban-urban migration (28 percent). Surprisingly, rural-urban migration—the major form of migration in most developing countries—accounts for only one-fifth of total female migration in Eritrea.

With the exception of urban-urban migration, marriage is the predominant reason for all forms of migration (Table 3.3), particularly for rural-rural migration. While rural women mainly migrate to urban areas for reasons relating to marriage, employment, and education, those who move from one urban area to another tend to do so for a broader variety of reasons, including almost equally war-related reasons, liberation, a better home, employment, and marriage.

Information on migration streams both within and between zobas is presented in Table 3.4. Migration from one place to another within the same zoba (shown in bold figures in Table 3.4) is the major form of migration in all zobas except zoba Debubawi Keih Bahri. This intra-zoba migration is particularly pronounced in zoba Debub, where nearly four in five female migrants came from other areas within the zoba.

Table 3.2 Reasons for migration by background characteristics

Percentage of all women who have ever moved from their place of birth and percent distribution of these migrants by the main reason for migrating, according to background characteristics, Eritrea 2002

Background characteristics	Migration		Reason for migration										
	Percentage who migrated	Number of women	Liberation	War-related reasons	Drought, deforestation, famine	Employment	Education	Marriage	Better home	Other	Missing	Total	Number of women migrants
Age													
15-19	36.8	2,001	13.4	22.1	0.6	9.5	21.4	17.1	13.3	2.3	0.3	100.0	737
20-24	51.2	1,454	9.2	16.8	1.2	12.0	4.9	42.0	10.2	3.3	0.3	100.0	744
25-29	56.3	1,543	7.1	12.5	1.5	16.2	3.7	45.3	11.9	1.7	0.2	100.0	869
30-34	59.9	1,109	12.0	11.1	2.1	13.0	2.0	47.2	9.8	2.7	0.2	100.0	664
35-39	66.2	1,085	12.3	12.7	1.9	13.0	3.0	42.6	12.0	2.2	0.2	100.0	719
40-44	62.3	827	12.1	11.4	2.3	14.5	3.3	45.3	9.8	1.1	0.0	100.0	515
45-49	65.1	734	6.7	12.8	2.9	13.2	1.5	49.4	12.5	0.9	0.0	100.0	478
Residence													
Urban	62.8	3,767	14.3	16.6	1.3	20.5	9.4	21.5	13.6	2.5	0.3	100.0	2,364
Asmara	55.9	1,899	12.3	17.8	1.0	19.2	11.1	18.8	17.4	1.8	0.4	100.0	1,062
Other towns	69.7	1,868	16.0	15.5	1.6	21.6	8.0	23.6	10.4	3.0	0.2	100.0	1,302
Rural	47.4	4,987	6.5	12.3	2.0	5.6	2.7	59.9	9.3	1.7	0.1	100.0	2,363
Zoba													
Debubawi Keih Bahri	43.7	324	7.1	10.7	0.7	37.2	7.1	23.4	5.7	8.2	0.0	100.0	142
Maekel	55.2	2,264	10.7	16.3	1.1	16.4	10.3	25.8	16.8	2.0	0.5	100.0	1,250
Semenawi Keih Bahri	42.9	1,148	15.5	12.1	3.7	16.0	4.5	33.4	12.9	2.0	0.0	100.0	493
Anseba	46.5	1,130	10.9	6.9	2.0	8.9	4.5	53.8	11.1	1.9	0.0	100.0	526
Gash-Barka	57.1	1,500	20.2	23.2	3.5	11.1	3.9	27.3	9.7	1.1	0.0	100.0	857
Debub	61.1	2,388	2.8	11.5	0.5	9.5	4.6	60.6	8.0	2.3	0.1	100.0	1,460
Education													
No education	55.8	4,384	8.0	12.3	2.8	10.1	1.7	54.1	9.4	1.6	0.0	100.0	2,448
Primary	59.1	1,637	11.6	12.2	0.9	19.3	3.7	37.7	12.4	2.0	0.2	100.0	968
Middle	45.7	974	16.3	17.8	0.3	9.3	11.4	24.6	14.9	4.7	0.7	100.0	445
Secondary +	49.2	1,760	12.9	21.3	0.2	16.3	18.3	14.1	14.2	2.4	0.4	100.0	866
Wealth index													
Lowest	40.1	1,472	8.2	12.2	3.6	2.5	2.7	60.4	9.1	1.2	0.0	100.0	590
Second	46.5	1,626	8.2	11.8	2.6	3.4	2.4	61.2	9.7	0.7	0.0	100.0	756
Middle	53.6	1,674	11.8	13.4	1.4	6.9	2.3	54.5	7.7	1.8	0.2	100.0	897
Fourth	69.0	1,833	9.1	15.2	1.7	17.8	9.1	29.4	14.2	3.4	0.2	100.0	1,265
Highest	56.8	2,149	13.1	17.0	0.5	23.8	9.5	19.8	13.4	2.5	0.4	100.0	1,220
Total	54.0	8,754	10.4	14.4	1.7	13.1	6.0	40.7	11.4	2.1	0.2	100.0	4,727

Note: Migration is defined as not having always lived in the place of residence at the time of the survey. It is based on the de jure population.

Table 3.3 Reasons for migration by type of migration

Percent distribution of female migrants by main reason for migrating, according to type of migration, Eritrea 2002

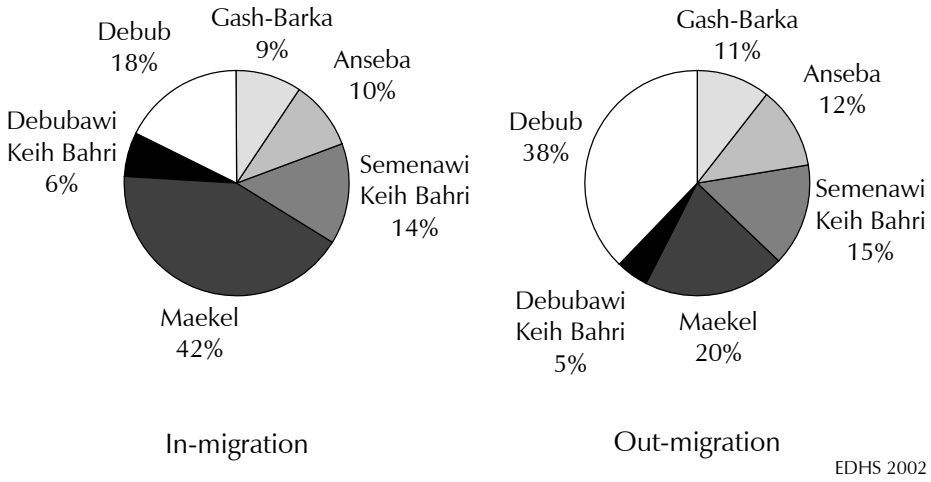
Type of migration	Total	Reason for migration: Liberation	War and war-related reasons	Drought, deforestation, famine	Employment	Education	Marriage	Better home	Other	Missing	Total	Number of women migrants
Urban-urban	28.0	17.8	21.1	0.7	17.1	4.8	17.1	18.1	2.8	0.4	100.0	1,324
Urban-rural	9.1	16.6	14.7	1.0	11.6	2.7	32.5	16.5	4.5	0.0	100.0	429
Rural- rural	40.0	4.0	11.9	2.3	4.3	2.7	66.1	7.5	1.1	0.1	100.0	1,892
Rural-urban	21.3	9.2	11.1	2.2	25.2	15.3	26.7	8.0	2.2	0.0	100.0	1,006
Abroad/missing	1.6	21.4	4.2	0.5	7.8	5.8	48.9	8.2	1.8	1.4	100.0	77
Total	100.0	10.4	14.4	1.7	13.1	6.0	40.7	11.4	2.1	0.2	100.0	4,727

Table 3.4 Zoba in-migration and out-migration, and immigration from abroad

Percent distribution of female migrants by zoba of origin or country of origin, according to zoba of destination, Eritrea 2002

Zoba/country of origin	Zoba of destination: Debubawi Keih Bahri	Maekel	Semenawi Keih Bahri	Anseba	Gash-Barka	Debub	Total
Debubawi Keih Bahri	**17.5**	1.8	1.6	0.4	0.1	1.1	1.6
Maekel	18.8	**40.6**	9.2	6.3	2.7	5.3	15.1
Semenawi Keih Bahri	5.1	4.2	**48.3**	5.0	0.8	3.8	8.2
Anseba	0.9	4.1	6.6	**67.9**	3.6	0.4	10.1
Gash-Barka	1.3	3.5	1.2	5.6	**64.2**	1.8	13.9
Debub	19.3	20.7	10.9	2.2	3.8	**78.5**	32.4
Ethiopia	33.1	19.1	2.7	0.9	2.6	7.7	9.3
Sudan	0.2	2.5	18.2	11.5	21.6	0.7	8.0
Other Africa/Middle East	3.4	1.9	1.2	0.2	0.5	0.4	0.9
Other/missing	0.4	1.6	0.2	0.0	0.0	0.3	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	142	1,250	493	526	857	1,460	4,727
Percentage of in-migrants	3.0	26.4	10.4	11.1	18.1	30.9	100.0
In-migrants from other zobas	64	429	145	103	95	180	1,016
Percent distribution	6.3	42.2	14.3	10.1	9.4	17.7	100.0
Out-migrants into other zobas	49	206	148	122	107	384	1,016
Percent distribution	4.8	20.3	14.6	12.0	10.5	37.8	100.0
Net number of migrants	15	223	-3	-19	-12	-204	0
Immigrants (returnees from abroad)	53	314	110	66	212	132	887
Percent distribution immigrants	6.0	35.4	12.4	7.4	23.9	14.9	100.0

Figure 3.1
In-migration and Out-migration by Zoba



Migration between zobas is dominated by a major flow originating from zoba Debub (accounting for 38 percent of all out-migrants), followed by zoba Maekel (20 percent) and zoba Semenawi Keih Bahri (15 percent) (Figure 3.1). Zoba Maekel is the most favored zoba for in-migrants from other zobas (42 percent), followed by zoba Debub (18 percent) and zoba Semenawi Keih Bahri (14 percent). The least favored zoba is Debubawi Keih Bahri, receiving only 6 percent of all in-migrants. Comparing the number of internal in- and out-migrants, zoba Maekel experienced the largest net gain due to female migration and zoba Debub experienced the largest net decline.

Table 3.4 also shows that nearly one-fifth (18 percent) of female migrants were from abroad, with the largest number coming from Ethiopia (9 percent) and the Sudan (8 percent). Zoba Maekel and zoba Gash-Barka were the most common destinations for migrants from abroad, accounting for 35 percent and 24 percent of international immigrants, respectively. One-third and one-fifth of the total migrants into zoba Debubawi Keih Bahri and zoba Maekel, respectively, were from Ethiopia. Immigrants from the Sudan constituted roughly one-fifth of the total migrants into zoba Gash-Barka and zoba Semenawi Keih Bahri.

3.3 EDUCATIONAL ATTAINMENT BY BACKGROUND CHARACTERISTICS

Table 3.5 shows the percent distribution of respondents by highest level of schooling attended, according to background characteristics. As mentioned previously, about half of the respondents have never attended school and 16 percent have had only some primary schooling. While one-third of Eritrean women 15-49 have completed primary school, only 8 percent have completed secondary education.

Younger women are more likely to be educated and to reach higher levels of education than older women. The proportion of women who have never attended school rises rapidly with increasing age. Only one in five women age 15-19 has no formal education, compared with more than three-fourths of women age 45-49. Similarly, 29 percent of women age 15-19 have some secondary or higher education, compared with only 4 percent of women age 45-49.

Table 3.5 Educational attainment by background characteristics

Percent distribution of women by highest level of schooling attended or completed, median number of years of schooling, and percent literate, according to background characteristics, Eritrea 2002

Background characteristic	Highest level of schooling attended or completed								Total	Number of women	Median years of schooling	Percent literate
	No education	Some primary	Completed primary[1]	Some middle	Completed middle[2]	Some secondary	Completed secondary[3]	More than secondary				
Age												
15-19	21.2	20.8	3.6	22.3	3.2	25.2	3.2	0.6	100.0	2,001	4.6	77.1
20-24	42.2	17.1	2.8	8.3	3.2	15.6	8.8	1.9	100.0	1,454	2.0	56.4
25-29	47.3	16.9	2.7	6.3	2.1	12.7	10.2	1.8	100.0	1,543	0.8	51.7
30-34	65.0	12.8	1.9	4.3	1.2	5.2	7.6	2.1	100.0	1,109	0.0	36.5
35-39	65.4	15.7	1.2	3.6	1.1	4.5	7.5	1.1	100.0	1,085	0.0	34.5
40-44	73.0	12.0	1.4	3.0	1.1	3.6	3.1	2.9	100.0	827	0.0	26.5
45-49	79.3	12.5	1.2	1.8	1.3	1.6	2.1	0.3	100.0	734	0.0	19.4
Residence												
Total urban	22.7	16.5	3.0	13.0	3.6	24.0	13.9	3.3	100.0	3,767	5.4	76.0
Asmara	11.0	12.9	2.6	11.5	3.9	31.3	21.2	5.4	100.0	1,899	7.3	88.0
Other towns	34.5	20.1	3.4	14.6	3.2	16.5	6.6	1.0	100.0	1,868	3.3	63.7
Rural	70.8	16.2	1.9	5.9	1.1	3.4	0.6	0.1	100.0	4,987	0.0	28.9
Zoba												
Debubawi Keih Bahri	51.7	11.8	3.6	8.3	3.8	13.0	7.1	0.6	100.0	324	0.0	45.5
Maekel	14.3	14.4	2.9	12.5	3.9	29.2	18.1	4.7	100.0	2,264	6.7	85.0
Semenawi Keih Bahri	71.8	14.1	1.8	4.8	1.8	3.6	1.9	0.2	100.0	1,148	0.0	26.7
Anseba	59.5	18.8	1.4	10.2	1.4	6.8	1.9	0.0	100.0	1,130	0.0	40.4
Gash-Barka	77.3	13.6	1.2	3.3	1.2	2.4	0.7	0.2	100.0	1,500	0.0	21.2
Debub	51.7	20.4	3.2	10.7	1.4	9.0	2.9	0.7	100.0	2,388	0.0	48.1
Wealth Index												
Lowest	83.0	10.7	0.7	3.8	0.9	0.8	0.0	0.0	100.0	1,472	0.0	17.2
Second	77.5	13.1	1.1	5.3	0.5	2.2	0.2	0.0	100.0	1,626	0.0	21.2
Middle	65.3	20.1	2.2	7.2	1.1	3.6	0.4	0.1	100.0	1,674	0.0	33.6
Fourth	31.0	23.4	4.4	14.3	3.9	17.3	4.8	0.9	100.0	1,833	3.4	68.6
Highest	11.2	13.6	2.9	12.2	3.6	30.2	21.3	5.1	100.0	2,149	7.2	87.6
Total	50.1	16.3	2.4	9.0	2.1	12.3	6.4	1.5	100.0	8,754	0.0	49.1

[1] Completed 5 grades in primary level
[2] Completed 7 grades in middle level
[3] Completed 11 grades in secondary level

The level of education also varies greatly by residence. Women in rural areas are far less likely to be educated than their urban counterparts. Nearly three-fourths (71 percent) of rural women have not attended school, more than three times the proportion of urban women (23 percent). The urban-rural difference is more pronounced at the secondary-school level or higher. Only 4 percent of women in rural areas have attended secondary school, compared with 41 percent of women in urban areas. As expected, women who reside in Asmara have higher levels of educational attainment, especially at the secondary-school level or higher; 58 percent of women in Asmara have some secondary education. By zoba, the proportion of women with no formal education ranges from a high of 77 percent in zoba Gash-Barka to a low of 14 percent in zoba Maekel. Similarly, some secondary education is most common (52 percent) for women who reside in zoba Maekel and least common (3 percent) for women in zoba Gash-Barka.

The wealth index exhibits a positive association with women's educational attainment. Whereas 83 percent of the women in the lowest quintile of the wealth index have never been to school, the proportion for women in the highest quintile is only 11 percent. Less than 1 percent of women in the lowest quintile have at least some secondary education, compared with 57 percent of women in highest quintile.

The median number of years of schooling is shown in Table 3.5 for the various subgroups. The figures confirm the above findings: younger women, those living in urban areas, those living in zoba Maekel, and those in the highest quintile of the wealth index have had more years of schooling.

Table 3.5 also shows the percentage of women who are literate. Literacy is widely acknowledged as benefiting both the individual and the society and is associated with a number of positive outcomes for health and nutrition. Knowing the distribution of the literate population can help planners—especially in the areas of health and family planning—reach women with their messages. Literacy is increasingly important for taking advantage of day-to-day opportunities. In the 2002 EDHS, literacy was determined by asking respondents if they could read and write in any language without difficulty. This question was asked only to respondents who had never attended school or had attended primary school only; those who had attended middle school or above were assumed to be literate. This approach to measuring literacy is subjective, since no test of ability to read or write was administered.

Overall, nearly half of Eritrean women are literate. The level of literacy is much higher for younger women than older women, ranging from a high of 77 percent for women age 15-19 to a low of 19 percent for women age 45-49. Urban women have a higher level of literacy (76 percent) than rural women (29 percent). Literacy levels also vary widely among zobas, with the percent literate more than four times higher in zoba Maekel (85 percent) than in zoba Gash-Barka (21 percent). There are also marked differences in literacy levels by women's wealth status, ranging from 17 percent of women in the lowest wealth quintile to 88 percent of those in the highest quintile.

3.4 REASONS FOR LEAVING SCHOOL

Knowledge of the reasons for leaving school can guide policies aimed at enhancing women's status in general and the level of women's educational attainment in particular. Table 3.6 presents the percent distribution of women age 15-24 years who ever attended school but are not currently attending, by their reason for leaving school.

Table 3.6 Reason for leaving school by zoba

Percent distribution of women age 15-24 who have ever attended school but are not currently attending school by reason for leaving school, according to zoba, Eritrea 2002

Reason	Debubawi Keih Bahri	Maekel	Semenawi Keih Bahri	Anseba	Gash-Barka	Debub	Total
Got pregnant	4.8	1.8	0.9	1.4	3.6	1.3	1.8
Got married	27.8	19.3	25.3	43.7	41.4	60.9	38.1
Care for younger children	4.0	4.8	10.3	5.2	4.0	3.6	4.8
Family needed help	3.5	4.0	5.8	9.6	7.3	6.1	5.8
Could not pay school fees	2.1	2.8	2.2	0.7	2.7	1.9	2.2
Needed to earn money	7.2	4.8	3.7	2.2	6.0	1.8	3.7
Finished schooling	13.6	18.1	8.0	1.5	1.8	3.7	9.0
Did not pass entrance exam	13.8	19.8	2.8	3.2	1.1	3.3	9.1
Did not like school	5.5	7.5	6.9	6.5	6.4	2.7	5.7
School too far	2.7	2.1	6.5	1.8	9.6	3.1	3.6
Illness	11.1	12.4	26.2	20.0	11.9	10.9	14.0
Other	3.8	2.6	1.5	4.2	4.1	0.6	2.3
Missing/Don't know	0.0	0.2	0.0	0.0	0.0	0.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number not attending	33	489	123	156	153	427	1,381

Marriage is the single most important reason for leaving school among Eritrean women age 15-24. Thirty-eight percent of women in this age group reported marriage as their major reason for leaving school. The next most frequently cited reason was illness (14 percent). Nine percent of women said they left school because they did not pass the entrance exams required to continue, while another 9 percent said they left school because they "finished" schooling. Other reasons cited for leaving school are: family needed help (6 percent), did not like school (6 percent), care for young children (5 percent), and school too far away (4 percent). It is interesting to note that inability to pay school fees and pregnancy are the two least common reasons for leaving school in Eritrea.

Marriage is the main reason for leaving school in all zobas, except in zoba Semenawi Keih Bahri and zoba Maekel where "illness" and "did not pass entrance exams," respectively, are cited more frequently. Sixty-one percent of women who reside in zoba Debub reported that they stopped schooling because they got married, compared with 44 percent of women in zoba Anseba, 41 percent in zoba Gash-Barka, and 28 percent in zoba Debubawi Keih Bahri. The proportion is relatively lower for zobas Maekel and Semenawi Keih Bahri (19 and 25 percent, respectively). Similar to the nation as a whole, illness is the second most frequently cited reason for leaving school in zoba Debub (11 percent), zoba Gash-Barka (12 percent) and zoba Anseba (20 percent). In zobas Debubawi Keih Bahri and Maekel, "finished schooling" and "did not pass entrance exam" are among the important reasons for leaving school. Twenty percent of women in zoba Maekel mentioned that they left school because they were not able to pass the entrance exams, while 18 percent said they left because they had finished schooling. In zoba

Semenawi Keih Bahri, the need to care for younger children, and in zoba Anseba, that the family needed help, are cited fairly frequently. In zoba Gash-Barka, the third most important reason for girls leaving school is that the school is too far away.

3.5 ACCESS TO MASS MEDIA

The 2002 EDHS collected information on the exposure of women to broadcast and print media by asking respondents if they usually read newspapers, listen to the radio, or watch television at least once a week. These data are important because they provide an indication of the extent to which Eritrean women are regularly exposed to the mass media, which are extensively used in Eritrea to disseminate reproductive health and other messages to the population.

Table 3.7 shows the percentage of women exposed to different types of mass media by selected background characteristics. Overall, 18 percent of women usually access all three media at least once a week. Radio is the most popular medium; nearly three-fourths of women listen to the radio at least once a week, while much smaller proportions read newspapers (28 percent) or watch television (28 percent) weekly. More than one-fourth (26 percent) of women are not regularly exposed to any of these mass media. Access to the three media has increased since the previous EDHS. The proportion of women who listen to a radio at least once a week has increased by one-third from 53 percent in 1995 to 71 percent in 2002. Exposure to newspapers or magazines and to television has also increased over the same period, from 20 to 28 percent for newspapers/magazines and from 18 to 28 percent for television.

The proportion of women who are exposed to any media at least once a week declines with age. As expected, women living in urban areas are much more likely to be exposed to the mass media, particularly newspapers/magazines and television, than rural women. Overall, more than one-third of urban women are exposed to all three media at least once a week, compared with only 2 percent of rural women.

Among the zobas, exposure to all three types of media is greatest among women who reside in zoba Maekel (48 percent) and least among women in zoba Gash-Barka (3 percent). As expected, there is a positive association between the level of education and exposure to mass media; as the education level of respondents increases, the proportion who report exposure to each of the three mass media increases, especially the print media and television. Fifty-nine percent of women with some secondary education have access to all three media, compared with less than 1 percent of women with no formal education. Women's economic status also reflects a positive relationship with access to mass media. Access to all three media ranges from a low of less than 1 percent among women in the two lowest quintiles of the wealth index to a high of 55 percent among women in the highest quintile of the wealth index. The differential is most pronounced for exposure to television: 2 percent for women in the lowest quintile compared with 82 percent for women in the highest quintile of the wealth index.

Table 3.7 Exposure to mass media

Percentage of women who usually read a newspaper at least once a week, watch television at least once a week, and listen to the radio at least once a week, by background characteristics, Eritrea 2002

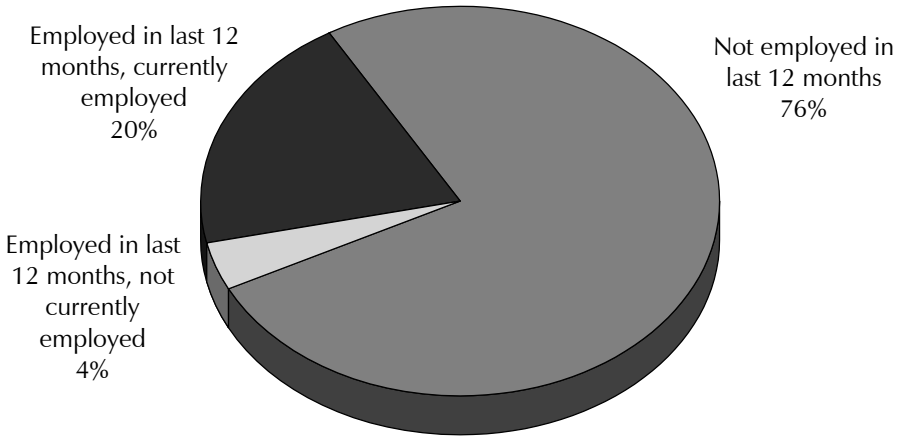
Background characteristic	Type of mass media exposure: Reads a newspaper at least once a week	Watches television at least once a week	Listens to the radio at least once a week	All three media	No mass media	Number of women
Age						
15-19	45.2	35.5	81.9	24.8	14.8	2,001
20-24	32.6	31.0	72.3	21.6	25.0	1,454
25-29	29.3	29.6	70.7	19.1	27.6	1,543
30-34	21.3	22.4	66.8	14.5	31.4	1,109
35-39	18.1	25.7	69.9	13.8	28.7	1,085
40-44	14.1	20.6	61.8	9.1	36.1	827
45-49	9.3	20.2	61.6	6.4	36.4	734
Residence						
Total urban	50.4	60.6	88.6	38.4	7.6	3,767
Asmara	64.0	81.0	93.3	55.5	2.7	1,899
Other towns	36.7	39.8	83.8	21.0	12.6	1,868
Rural	11.0	3.7	58.3	1.8	40.7	4,987
Zoba						
Debubawi Keih Bahri	24.1	35.3	49.3	16.4	43.0	324
Maekel	58.8	70.6	92.2	47.8	4.0	2,264
Semenawi Keih Bahri	15.0	14.9	57.1	6.1	40.7	1,148
Anseba	19.9	14.7	66.5	8.2	31.4	1,130
Gash-Barka	11.0	4.8	58.4	2.7	41.1	1,500
Debub	19.9	14.4	71.7	8.3	27.0	2,388
Education						
No education	1.4	6.0	52.0	0.4	47.1	4,384
Primary	35.6	26.9	84.5	13.0	10.8	1,637
Middle	52.3	43.3	92.6	26.9	4.5	974
Secondary +	73.5	76.1	95.4	59.3	1.6	1,760
Wealth index						
Lowest	7.1	1.6	44.1	0.6	54.8	1,472
Second	8.4	2.4	54.6	0.9	44.4	1,626
Middle	13.3	3.8	67.2	1.8	31.6	1,674
Fourth	34.5	31.4	87.9	16.4	10.1	1,833
Highest	62.9	82.2	91.7	55.1	3.2	2,149
Total 2002	28.0	28.2	71.3	17.6	26.4	8,754
Total 1995	20.2	17.5	52.6	11.0	45.5	5,054

3.6 EMPLOYMENT STATUS

In the 2002 EDHS, respondents were asked a series of questions about their employment, including whether they were currently working and, if not, whether they had worked in the 12 months before the survey. Table 3.8 and Figure 3.2 show the percent distribution of women age 15-49 by employment status, according to background characteristics. Overall, the majority of women (76 percent) did not work at all in the 12 months preceding the survey. Only one in five women reported being currently employed and 4 percent of women worked during the 12 months prior to the survey but were not currently employed. The current employment level has declined from 25 percent in 1995 to 20 percent in 2002 (Table 3.8).

Older women are generally more likely to be employed than younger women. Women who are divorced, separated, or widowed are the most likely to be employed (43 percent), followed by those who have not married (24 percent); currently married women are the least likely to be employed (15 percent). Women with five or more children are less likely to be working at the time of the survey than women with fewer children or no children at all. The current employment level is higher for women in urban areas than in rural areas. By zoba, the highest proportion currently employed (35 percent) is in zoba Debubawi Keih Bahri, followed by zoba Maekel (31 percent), and the lowest is in zoba Anseba, at 9 percent. Education generally has a positive association with the level of current employment; the proportion of women who are currently employed ranges from 14 percent among uneducated women to 34 percent among women with at least some secondary education. The employment level has a positive correlation with women's wealth status. Among women in the highest quintile of the wealth index, 33 percent are currently employed, compared with only 8 percent among women in the lowest quintile.

Figure 3.2
Employment Status of Women



EDHS 2002

Table 3.8 Employment status

Percent distribution of women by employment status, according to background characteristics, Eritrea 2002

Background characteristic	Employed in the 12 months preceding the survey: Currently employed	Employed in the 12 months preceding the survey: Not currently employed	Not employed in the 12 months preceding the survey	Missing	Total	Number of women
Age						
15-19	10.1	2.8	87.1	0.1	100.0	2,001
20-24	18.5	4.3	77.2	0.0	100.0	1,454
25-29	25.0	3.2	71.8	0.1	100.0	1,543
30-34	21.3	5.3	73.3	0.0	100.0	1,109
35-39	24.9	4.1	71.0	0.0	100.0	1,085
40-44	23.3	4.5	72.1	0.0	100.0	827
45-49	24.4	5.7	69.8	0.2	100.0	734
Marital status						
Never married	23.5	2.8	73.6	0.0	100.0	2,044
Married or living together	14.5	3.9	81.6	0.0	100.0	5,733
Divorced/separated/widowed	43.3	7.1	49.5	0.2	100.0	977
Number of living children						
0	20.4	2.7	76.8	0.0	100.0	3,019
1-2	22.2	5.0	72.7	0.1	100.0	2,287
3-4	21.6	5.0	73.4	0.0	100.0	1,772
5+	13.6	3.9	82.5	0.0	100.0	1,677
Residence						
Total urban	28.6	3.5	67.7	0.1	100.0	3,767
Asmara	33.9	3.9	62.1	0.2	100.0	1,899
Other towns	23.3	3.2	73.5	0.1	100.0	1,868
Rural	13.2	4.3	82.5	0.0	100.0	4,987
Zoba						
Debubawi Keih Bahri	35.2	2.1	62.6	0.1	100.0	324
Maekel	30.8	3.5	65.6	0.2	100.0	2,264
Semenawi Keih Bahri	10.0	1.0	89.0	0.0	100.0	1,148
Anseba	9.4	2.1	88.5	0.0	100.0	1,130
Gash-Barka	14.9	5.2	79.9	0.0	100.0	1,500
Debub	20.0	6.3	73.6	0.0	100.0	2,388
Education						
No education	13.7	4.1	82.2	0.0	100.0	4,384
Primary	21.9	4.9	73.2	0.0	100.0	1,637
Middle	17.5	3.8	78.6	0.1	100.0	974
Secondary +	34.4	3.0	62.5	0.2	100.0	1,760
Wealth index						
Lowest	7.6	1.9	90.5	0.0	100.0	1,472
Second	13.0	4.2	82.7	0.0	100.0	1,626
Middle	14.0	7.1	78.9	0.0	100.0	1,674
Fourth	26.0	3.7	70.2	0.1	100.0	1,833
Highest	32.5	3.1	64.2	0.1	100.0	2,149
Total 2002	**19.8**	**4.0**	**76.1**	**0.0**	**100.0**	**8,754**
Total 1995	25.0	1.8	73.0	1.4	100.0	5,054

3.7 OCCUPATION

Respondents who were currently employed or had worked within the year before the survey were asked to state their occupation; results are shown in Table 3.9. The agricultural sector employs 30 percent of currently working women, a far lower proportion than in 1995 (55 percent). In 2002, almost one-fourth of working women were employed in sales and service occupations (24 percent), followed by domestic service (17 percent), and skilled manual jobs (12 percent). Ten percent of employed women work in professional, technical, and managerial occupations.

The occupational pattern of women who work varies by age. Women in all age groups except those in their twenties are most likely to be engaged in agricultural work. Those age 20-29 are most likely to be working in sales and service occupations. More than one-fourth (27 percent) of women age 15-19 are domestic-service workers.

Currently married women who are working tend to be employed in agricultural work (41 percent), whereas never-married women and those who are divorced, separated or widowed tend to work in either sales and service jobs or in domestic service. The large majority (63 percent) of employed rural women work in agriculture. Working women who reside in urban areas, particularly in Asmara, are almost exclusively employed in non-agricultural occupations; 29 percent of employed urban women work in sales and service jobs and nearly one-fourth (23 percent) work in domestic service.

Women are most likely to be employed in agricultural activities in all zobas except zoba Maekel and zoba Semenawi Keih Bahri, where sales and services and domestic service are the predominant occupations. Education is strongly related to the type of occupation. Over half (55 percent) of women who are employed and have never attended school work in agriculture. Working women with primary and middle education are about as likely to be employed in agriculture as in sales and service occupations, in domestic service, and in skilled manual jobs. Women who have at least some secondary education are most likely to be employed in sales and services (29 percent), followed closely by professional, managerial, or technical jobs (28 percent), and clerical occupations (18 percent). Agriculture is by far the major occupation of working women in the lower quintiles of the wealth index, while sales and services account for the largest proportion of women in the fourth and highest quintiles (29 and 28 percent, respectively). Nearly one-fourth of women in the fourth and highest quintile are employed in domestic service.

3.8 EARNINGS, EMPLOYERS AND CONTINUITY OF EMPLOYMENT

Table 3.10 shows the percent distribution of women employed in the 12 months preceding the survey by type of earnings, type of employer, and continuity of employment, according to whether they work in agricultural or non-agricultural jobs. Almost two-thirds (65 percent) of employed women receive payments in cash only, while 15 percent do not receive any form of payment for their work, 13 percent receive payment in kind only, and 8 percent receive both cash and in-kind payments (Figure 3.3). Women who are engaged in nonagricultural jobs are more than five times as likely to be paid in cash only as those who work in agricultural jobs. On the other hand, women employed in the agricultural sector are much more likely to receive payment in kind or no payment than those who work in nonagricultural jobs (Table 3.10).

Data on type of employer in Table 3.10 indicate that over half (53 percent) of working women are employed by someone outside the family, while 39 percent are self-employed, and 8 percent work for a family member. These results are also displayed graphically in Figure 3.4. Women engaged in agricultural occupations are predominantly self-employed (68 percent); the majority of women involved in nonagricultural activities are employed by nonfamily members (68 percent).

Table 3.9 Occupation

Percent distribution of women employed in the 12 months preceding the survey by occupation, according to background characteristics, Eritrea 2002

Background characteristic	Professional/ technical/ managerial	Clerical	Sales and services	Skilled manual	Un-skilled manual	Domestic service	Agri-culture	Missing	Total	Number of women
Age										
15-19	4.2	3.0	13.6	15.0	0.1	26.6	37.6	0.0	100.0	258
20-24	14.9	9.3	25.7	10.7	0.3	15.2	23.9	0.1	100.0	331
25-29	9.2	7.9	33.8	12.0	0.3	13.9	21.5	1.4	100.0	434
30-34	12.9	9.8	23.9	10.0	0.3	11.3	31.2	0.5	100.0	296
35-39	10.7	8.0	20.8	14.3	0.5	21.3	22.9	1.4	100.0	314
40-44	13.3	4.4	16.4	7.1	1.3	16.7	39.5	1.4	100.0	230
45-49	3.9	1.5	21.8	15.6	0.9	13.4	41.6	1.2	100.0	220
Marital status										
Never married	13.6	9.4	26.5	13.0	0.3	21.9	15.3	0.0	100.0	538
Married or living together	11.2	7.0	21.6	8.9	0.6	9.1	40.6	1.0	100.0	1,054
Divorced/separated/widowed	4.1	3.4	24.0	17.8	0.4	27.3	21.4	1.6	100.0	492
Number of living children										
0	12.7	9.1	26.1	14.1	0.2	18.5	18.9	0.3	100.0	699
1-2	11.1	7.6	22.9	12.8	0.2	19.3	24.4	1.8	100.0	621
3-4	8.7	4.7	22.9	10.4	1.6	15.6	35.3	1.0	100.0	471
5+	4.4	2.5	19.2	8.3	0.0	8.6	56.8	0.1	100.0	293
Residence										
Total urban	15.1	10.8	28.5	14.6	0.6	23.2	5.8	1.5	100.0	1,211
Asmara	17.5	13.5	27.6	15.2	0.6	23.3	1.3	1.1	100.0	717
Other towns	11.7	6.8	29.8	13.8	0.5	23.1	12.2	2.0	100.0	494
Rural	3.2	1.1	16.4	8.5	0.3	7.7	62.6	0.1	100.0	873
Zoba										
Debubawi Keih Bahri	3.3	9.3	21.1	4.5	0.5	25.0	34.6	1.6	100.0	121
Maekel	16.4	12.8	27.3	15.1	0.6	22.3	4.6	1.0	100.0	775
Semenawi Keih Bahri	7.8	4.8	20.7	12.9	2.0	33.4	18.4	0.0	100.0	126
Anseba	10.9	6.1	16.8	5.0	0.0	15.9	45.4	0.0	100.0	130
Gash-Barka	4.0	2.7	26.4	14.0	0.8	8.9	42.5	0.7	100.0	302
Debub	7.0	1.2	19.7	10.1	0.0	8.8	52.1	1.1	100.0	629
Education										
No education	0.5	0.0	18.8	9.7	0.7	14.6	55.2	0.5	100.0	780
Primary	1.9	1.4	22.7	18.1	0.0	26.8	28.3	0.7	100.0	439
Middle	6.9	6.8	22.2	16.0	0.1	26.7	18.9	2.3	100.0	207
Secondary +	28.1	18.2	29.8	9.6	0.7	9.3	3.3	1.0	100.0	657
Wealth index										
Lowest	0.7	0.0	18.0	7.0	0.6	1.7	72.1	0.0	100.0	140
Second	2.5	1.1	13.1	5.2	0.8	3.6	73.3	0.3	100.0	280
Middle	2.5	0.8	14.3	9.7	0.0	10.7	61.7	0.3	100.0	352
Fourth	8.5	3.9	29.4	19.2	0.4	23.1	15.1	0.5	100.0	544
Highest	19.4	14.8	28.2	11.5	0.6	22.4	1.2	1.8	100.0	766
Total 2002	**10.1**	**6.7**	**23.5**	**12.1**	**0.5**	**16.7**	**29.6**	**0.9**	**100.0**	**2,084**
Total 1995	10.2	na	8.8	12.1	na	13.2	55.4	0.3	100.0	1,265

na = Not applicable

Table 3.10 Employment characteristics

Percent distribution of women employed in the 12 months preceding the survey by type of earnings, type of employer and continuity of employment, according to type of employment (agricultural or nonagricultural), Eritrea 2002

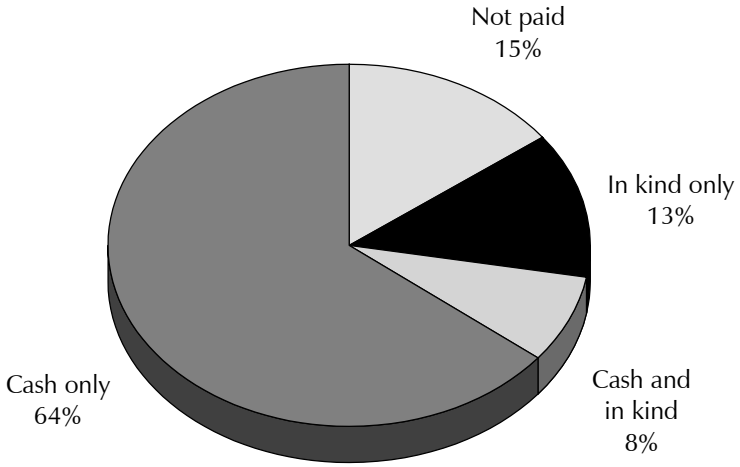
Characteristic	Type of employment		Total
	Agri-cultural work	Nonagri-cultural work	
Type of earnings			
Cash only	16.0	85.4	65.0
Cash and in kind	18.6	2.9	7.5
In kind only	38.0	1.9	12.6
Not paid	27.4	9.6	14.8
Missing	0.0	0.2	0.1
Total	100.0	100.0	100.0
Type of employer			
Employed by family member	14.9	4.9	7.9
Employed by nonfamily member	17.0	68.2	53.1
Self-employed	68.1	26.4	38.7
Missing	0.0	0.4	0.3
Total	100.0	100.0	100.0
Continuity of employment			
All year	13.4	79.8	60.1
Seasonal	76.2	7.1	27.5
Occasional	10.4	12.6	12.0
Missing	0.0	0.6	0.4
Total	100.0	100.0	100.0
Wealth index			
Lowest	16.4	2.7	6.7
Second	33.4	5.1	13.5
Middle	35.3	9.2	16.9
Fourth	13.4	31.7	26.1
Highest	1.5	51.3	36.8
Total	100.0	100.0	100.0
Number of women	616	1,449	2,084

Note: Total includes women with missing information on type of employment who are not shown separately

Table 3.10 shows that 60 percent of working women work all year, 28 percent work seasonally, and 12 percent work occasionally. As expected, the percentage of women who work all year is higher among women who work in nonagricultural jobs than among those who work in agriculture (80 and 13 percent, respectively), while seasonal employment is high among agricultural workers (76 percent).

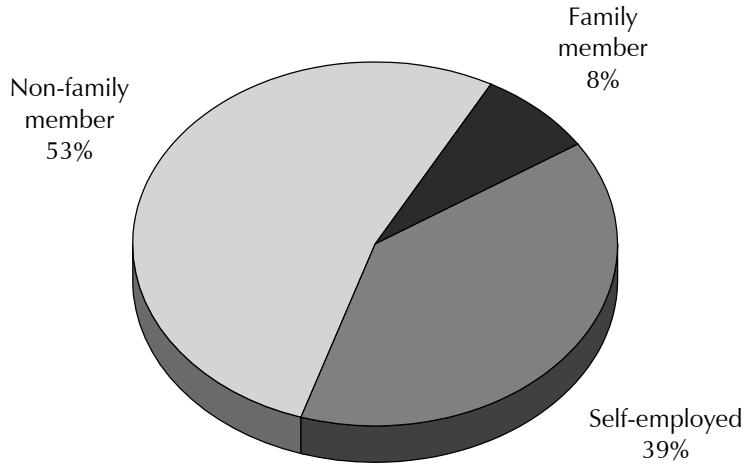
Although by definition, roughly 20 percent of all women fall into each quintile of the wealth index (see Table 3.1), women who work tend to be better off, with 37 percent falling in the highest quintile and only 7 percent in the lowest quintile. Most women employed in nonagricultural occupations are either in the fourth or the highest quintile, while the majority of those who are engaged in agricultural work fall in the second or middle quintiles.

Figure 3.3
Type of Earnings among Employed Women



EDHS 2002

Figure 3.4
Type of Employer among Employed Women



EDHS 2002

3.9 CHILD CARE WHILE WORKING

Table 3.11 shows the percentage of employed women who have a child under six years of age living at home and, for those who do, the percent distribution by type of child minder (caretaker) used by the mother while working, according to background characteristics. Almost four in ten (38 percent) of employed women have a child under six years of age, a sharp decline from the 53 percent recorded in the 1995 EDHS.

Over 80 percent of employed mothers report that their children under six years of age are cared for either by themselves (30 percent), an older female child (22 percent), an older male child (4 percent), or other relatives (25 percent). Women's husbands account for less than 1 percent of the caretakers of

Table 3.11 Childcare while working

Percent distribution of currently employed women by whether they have a child under six years of age and the percent distribution of employed mothers who have a child under six by person who usually takes care of the young child while mother works, according to background characteristics, Eritrea 2002

Background characteristics	Children < 6 at home				Person who takes care of child while mother works												
	No children < 6 at home	One or more children	Total	Number of women	Respondent	Husband, partner	Older female child	Older male child	Other relatives	Neighbors/ friends	Servants, hired help	Child is in school	Has not worked since last birth	Other	Missing	Total	Number of children
Residence																	
Urban	68.9	31.1	100.0	1,078	18.6	0.2	14.7	4.8	33.0	6.9	14.4	2.2	1.6	1.0	2.6	100.0	335
Asmara	73.7	26.3	100.0	643	9.1	0.0	11.9	2.9	42.5	2.4	21.8	3.1	0.8	1.4	4.2	100.0	169
Other towns	61.9	38.1	100.0	435	28.3	0.4	17.5	6.7	23.3	11.6	6.9	1.3	2.5	0.5	1.1	100.0	165
Rural	51.6	48.4	100.0	656	41.3	0.5	29.9	3.7	17.4	2.1	0.0	0.0	3.1	0.1	2.0	100.0	318
Zoba																	
Debubawi Keih Bahri	61.3	38.7	100.0	114	30.3	1.5	15.6	3.2	34.8	8.6	1.0	0.0	1.6	1.1	2.5	100.0	44
Maekel	71.9	28.1	100.0	696	15.0	0.0	12.1	2.5	40.7	2.6	18.9	2.6	0.7	1.2	3.6	100.0	195
Semenawi Keih Bahri	70.7	29.3	100.0	115	(20.4)	0.0	12.7	5.3	30.7	14.8	(12.8)	(0.0)	(0.0)	1.9	(1.5)	100.0	34
Anseba	61.8	38.2	100.0	106	30.1	0.0	30.0	3.5	16.8	9.1	5.5	0.0	3.4	0.0	1.5	100.0	40
Gash-Barka	57.2	42.8	100.0	224	41.1	0.0	24.1	7.2	21.1	1.1	0.0	0.0	3.7	0.0	1.8	100.0	96
Debub	49.2	50.8	100.0	478	38.0	0.6	30.5	4.7	13.8	4.5	1.8	0.9	3.4	0.0	1.8	100.0	243
Education																	
No education	55.1	44.9	100.0	599	34.4	0.0	35.2	4.9	16.6	3.0	0.5	0.0	2.4	0.4	2.5	100.0	269
Primary	60.6	39.4	100.0	359	42.3	1.3	19.0	4.2	17.8	6.9	0.7	1.6	2.2	1.2	2.9	100.0	142
Middle	69.0	31.0	100.0	171	(26.5)	(0.0)	(16.5)	(3.5)	(34.3)	(6.5)	(2.2)	(0.0)	(8.5)	0.0	(2.0)	100.0	53
Secondary +	68.7	31.3	100.0	605	14.3	0.1	7.4	3.6	41.0	4.4	23.6	2.7	0.7	0.4	1.7	100.0	189
Type of employer																	
Family member	84.5	15.5	100.0	127	*	*	*	*	*	*	*	*	*	*	*	100.0	20
Non-family member	70.8	29.2	100.0	974	15.0	0.6	16.2	5.7	34.1	9.4	12.8	1.5	1.7	0.8	2.1	100.0	284
Self-employed	45.0	55.0	100.0	627	41.9	0.1	28.0	3.4	16.6	0.8	3.1	0.6	3.0	0.4	2.2	100.0	345
Occupation																	
Agricultural	51.2	48.8	100.0	401	28.2	0.0	38.9	6.0	17.0	2.4	0.0	0.0	4.6	0.1	2.7	100.0	196
Nonagricultural	65.7	34.3	100.0	1,333	30.3	0.5	14.9	3.5	29.0	5.4	10.5	1.6	1.4	0.7	2.2	100.0	457
Continuity of work																	
All year	66.6	33.4	100.0	1,181	28.5	0.5	15.4	3.6	31.0	4.5	10.9	1.6	1.2	0.8	1.9	100.0	394
Seasonal	49.0	51.0	100.0	367	30.3	0.0	37.2	4.4	16.7	2.5	1.1	0.0	4.5	0.1	3.1	100.0	187
Occasional	60.9	39.1	100.0	177	35.5	0.0	19.6	7.6	17.8	10.3	4.4	1.4	3.1	0.0	0.3	100.0	69
Work place																	
At home	54.9	45.1	100.0	308	67.3	0.0	11.4	0.0	17.7	0.6	0.8	0.0	2.1	0.0	0.1	100.0	139
Away	64.0	36.0	100.0	1,411	19.3	0.4	25.2	5.4	27.6	5.7	9.3	1.5	2.5	0.7	2.6	100.0	508
Total	62.4	37.6	100.0	1,733	29.7	0.3	22.1	4.3	25.4	4.5	7.4	1.1	2.3	0.5	2.3	100.0	652

Note: Total includes 4, 2, and 5 children with missing information for their mothers on type of employer, on continuity of employment, and whether works at home or away from home, respectively, who are not shown separately. Figures in parentheses are based on 25 to 49 unweighted cases; an asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

young children. Seven percent of mothers report that they depend on servants and hired help for child care and 5 percent report that neighbors and friends provide child care services.

Table 3.11 shows that mothers in rural areas, in zoba Gash-Barka, and those with primary education or who are self-employed are most likely to care for their children themselves while they work. Not surprisingly, this is especially true of those women who work at home.

Relatives other than respondents' own children are an especially important source of child care for urban mothers (33 percent), those in zoba Maekel (41 percent), and those with at least some secondary education (41 percent). Children, especially female children, are important providers of child care for women in rural areas, in zoba Debub and zoba Anseba, for those who have never attended school, those engaged in agricultural work, and those who work seasonally. Servants and hired help are used for child care more often by urban mothers, particularly women in Asmara (22 percent), those in zoba Maekel (19 percent), and mothers with secondary or higher education (24 percent).

3.10 DECISION ON USE OF EARNINGS

As a means of assessing women's autonomy, respondents in the 2002 EDHS who had received cash earnings for work in the 12 months before the survey were asked who mainly decides how these earnings will be used. Nearly three-fourths of women who receive cash earnings report that they alone decide how their earnings are used, while about one-fourth say that they decide jointly with their husband or someone else, and only 4 percent report that someone else alone decides how their earnings will be used (Table 3.12).

Women age 15-19 are more likely than older women to report that someone else decides how their earnings are to be used. Almost all working women who are divorced, separated, or widowed say that they alone are responsible for deciding how to use their earnings. Among currently married women, over one-half report that they alone decide how their earnings are used, while 40 percent say that such decisions are made jointly with their husband or someone else. Over three-fourths of never-married women make independent decisions on how to use their earnings. Women with five or more children are much less likely to decide on their own how to use their earnings than women with fewer children or no children at all.

With respect to control over how their earnings are spent, urban women are more likely than rural women to report that they themselves make decisions about how the money they earn will be used. By zoba, the proportion who make their own decisions on spending their earnings ranges from a high of 82 percent among women in zoba Semenawi Keih Bahri to a low of 65-66 percent among women in zoba Anseba and zoba Debub. Women who reached only primary or middle school are more likely than those who reached secondary school or higher to decide for themselves how to use the money they earn. The most educated women have the highest proportion (29 percent) who decide jointly how to use their earnings.

Table 3.12 Decision on use of earnings

Percent distribution of women employed in the 12 months preceding the survey who received cash earnings by person who decides how earnings are used, according to background characteristics, Eritrea 2002

Background characteristic	Person who decides how earnings are used					Number of women
	Self only	Jointly with someone else[1]	Someone else only[2]	Missing	Total	
Age						
15-19	68.2	15.8	16.0	0.0	100.0	160
20-24	75.9	18.7	5.5	0.0	100.0	242
25-29	74.4	21.8	3.7	0.1	100.0	352
30-34	72.0	27.4	0.5	0.0	100.0	214
35-39	71.7	25.4	2.1	0.8	100.0	248
40-44	66.2	33.4	0.4	0.0	100.0	152
45-49	77.0	22.0	1.0	0.0	100.0	143
Marital status						
Never married	76.7	15.2	8.1	0.0	100.0	419
Married or living together	56.2	39.8	3.6	0.3	100.0	694
Divorced/separated/widowed	97.0	2.7	0.4	0.0	100.0	397
Number of living children						
0	75.4	16.8	7.7	0.0	100.0	524
1-2	77.9	19.3	2.7	0.1	100.0	487
3-4	72.1	26.0	1.3	0.6	100.0	330
5+	49.6	49.1	1.3	0.0	100.0	168
Residence						
Total urban	75.2	21.2	3.4	0.2	100.0	1,069
Asmara	75.7	20.6	3.4	0.3	100.0	651
Other towns	74.3	22.2	3.4	0.1	100.0	418
Rural	66.5	28.2	5.4	0.0	100.0	441
Zoba						
Debubawi Keih Bahri	73.7	21.9	4.1	0.4	100.0	73
Maekel	76.1	20.2	3.5	0.3	100.0	676
Semenawi Keih Bahri	81.6	14.8	3.6	0.0	100.0	102
Anseba	64.9	31.0	4.2	0.0	100.0	93
Gash-Barka	72.7	20.2	7.1	0.0	100.0	175
Debub	66.0	30.4	3.6	0.0	100.0	392
Education						
No education	73.6	23.5	2.9	0.0	100.0	449
Primary	79.1	15.3	5.6	0.0	100.0	329
Middle	78.5	17.0	4.5	0.0	100.0	160
Secondary +	66.5	29.3	3.8	0.4	100.0	572
Total	72.6	23.2	4.0	0.1	100.0	1,510

[1] Includes husband

3.11 MEASURES OF WOMEN'S EMPOWERMENT

In addition to information on women's education, employment status, and control over earnings, the 2002 EDHS collected information on some other indicators of women's status and empowerment. In particular, questions were asked on women's participation in specific household decisions and on their attitudes towards wife beating. This information provides insight into women's control over their lives, their domestic environment, and their attitudes toward gender roles, which are relevant in understanding women's demographic and health behavior.

Women's Participation in Household Decisionmaking

To assess women's role in household decisionmaking, respondents in the 2002 EDHS were asked who in their family has the final say in decisions regarding: the respondent's own health care; making large household purchases; making purchases for daily household needs; visits to family or relatives; what food to cook each day; and assisting her family.[1] Table 3.13 shows the percent distribution of women by the person who makes each of these decisions, according to marital status.

Table 3.13 Women's participation in decisionmaking

Percent distribution of women by person who has the final say in making specific decisions, according to marital status, Eritrea 2002

	Currently married or living together							Not married[1]				
Decision	Self only	Jointly with husband	Jointly with someone else	Husband only	Someone else only	Decision not made/ not applicable	Total	Self only	Jointly with someone else	Someone else only	Decision not made/ not applicable	Total
Own health care	80.2	7.3	0.5	9.3	2.6	0.1	100.0	73.3	4.7	21.1	0.8	100.0
Large household purchases	22.9	31.4	0.9	37.4	6.6	0.9	100.0	30.8	6.8	53.1	9.1	100.0
Daily household purchases	44.8	20.1	1.0	27.0	6.5	0.5	100.0	35.5	6.6	49.3	8.4	100.0
Visits to family or relatives	40.9	30.8	1.1	19.8	6.4	1.0	100.0	38.5	7.7	46.1	7.4	100.0
What food to cook each day	80.1	6.2	1.2	6.8	5.3	0.4	100.0	43.9	8.6	40.3	7.0	100.0
Assisting woman's family[2]	26.9	38.1	1.0	23.2	6.9	3.8	100.0	34.2	7.6	47.3	10.7	100.0

Note: Information is based on 5,733 married and 3,021 not married women.
[1] Not married includes never married, divorced, separated or widowed women.
[2] Woman's kin group

Eighty percent of currently married women reported that they alone have the final say on decisions involving their own health care and what food to cook each day. Although over 40 percent of married women say they alone make decisions about daily household purchases and visits to family or relatives, these decisions are also likely to be shared with their husbands. Decisions on large household purchases are most likely to be made by the husband alone (37 percent) or jointly (31 percent). Among unmarried women, nearly three-fourths make decisions about their own health care by themselves, although 21 percent say that such decisions are made by someone else alone. Decisions on household purchases and visits to family or relatives also tend to be made by someone else among unmarried women. Almost two-thirds of currently married women either make decisions to assist their family by themselves (27 percent) or share such decisions with their husbands (38 percent). Nearly half of the unmarried women report that someone else has the final say on decisions related to assisting their family.

Table 3.14 shows the percentage of women who report that they alone or jointly have the final say in specific household decisions according to background characteristics. The results indicate that,

[1] The woman's kin group

Table 3.14 Women's participation in decisionmaking by background characteristics

Percentage of women who say that they alone or jointly have the final say in specific decisions, by background characteristics, Eritrea 2002

Background characteristic	Alone or jointly has final say in: Own health care	Making large purchases	Making daily purchases	Visits to family, relatives, friends	What food to cook daily	Assisting woman's family[1]	All specified decisions	None of the specified decisions	Number of women
Age									
15-19	68.3	19.6	25.4	28.8	41.6	24.9	13.8	21.7	2,001
20-24	86.9	46.5	54.6	61.2	70.7	54.8	37.4	6.3	1,454
25-29	89.3	57.2	66.9	72.8	85.2	66.3	48.1	3.3	1,543
30-34	89.6	60.6	70.0	77.0	88.9	70.2	52.7	2.9	1,109
35-39	90.8	62.7	73.2	79.5	92.5	72.9	53.9	2.5	1,085
40-44	91.0	63.8	73.0	80.5	92.4	74.9	57.1	2.2	827
45-49	90.3	63.3	73.2	81.0	92.6	73.9	56.8	2.2	734
Marital status									
Never married	70.0	17.8	22.8	28.3	36.2	23.7	12.8	22.1	2,044
Married/living together	88.0	55.1	65.8	72.7	87.6	66.0	45.9	3.2	5,733
Divorced/separated/ widowed	94.9	78.9	82.4	83.9	86.7	79.6	74.3	3.5	977
Number of living children									
0	74.5	26.3	32.5	37.6	47.6	32.9	19.8	17.2	3,019
1-2	89.1	60.9	70.2	74.6	86.5	68.8	52.4	3.6	2,287
3-4	90.7	64.6	73.8	79.5	92.1	72.3	55.5	2.0	1,772
5+	90.0	57.5	68.8	78.7	93.0	71.6	50.2	2.0	1,677
Residence									
Total urban	85.8	51.7	61.4	64.7	72.0	58.2	43.8	7.8	3,767
Asmara	86.8	48.0	59.1	64.5	67.1	55.7	40.4	6.8	1,899
Other towns	84.9	55.5	63.7	64.9	76.9	60.8	47.2	8.7	1,868
Rural	83.6	47.1	54.8	62.8	78.1	57.2	39.6	7.6	4,987
Zoba									
Debubawi Keih Bahri	78.4	57.6	66.3	64.4	68.6	59.6	51.7	16.1	324
Maekel	86.6	49.1	59.8	64.7	68.0	55.9	41.0	7.3	2,264
Semenawi Keih Bahri	81.8	42.1	44.6	53.2	72.0	53.7	36.4	9.4	1,148
Anseba	88.4	47.0	51.6	64.3	83.4	57.6	37.2	4.9	1,130
Gash-Barka	84.8	47.1	51.5	62.2	78.3	58.3	39.2	6.7	1,500
Debub	82.8	53.4	67.4	68.0	79.6	60.6	46.0	7.9	2,388
Education									
No education	86.7	52.8	59.7	68.3	84.3	63.4	44.8	5.2	4,384
Primary	83.2	53.6	64.4	67.1	77.2	59.6	44.9	9.0	1,637
Middle	77.8	36.5	46.5	47.7	58.0	43.2	29.5	13.6	974
Secondary +	84.0	42.4	52.3	57.4	61.5	49.4	36.1	9.4	1,760
Employment									
Not employed	83.1	44.4	53.3	60.1	74.7	53.8	36.6	8.3	7,011
Employed for cash	93.1	71.8	79.6	81.5	81.2	77.7	64.8	2.8	1,356
Employed not for cash	81.7	53.5	60.2	64.6	70.8	58.7	47.1	12.7	375
Wealth index									
Lowest	83.5	37.0	41.9	55.8	75.7	51.2	30.3	7.7	1,472
Second	81.5	47.1	54.3	61.7	78.4	59.2	39.7	8.8	1,626
Middle	83.9	52.4	61.1	65.0	77.6	58.8	44.6	7.4	1,674
Fourth	87.6	59.4	69.0	70.3	79.9	62.8	50.0	6.3	1,833
Highest	85.4	47.4	58.6	63.6	67.7	55.8	40.4	8.1	2,149
Total	84.5	49.1	57.6	63.6	75.5	57.7	41.4	7.7	8,754

Note: Total includes 12 women with missing information on employment who are not shown separately.
[1] Woman's kin group

overall, 41 percent of women participate in all of the six types of decisions. Only 8 percent have no involvement in making any of the decisions.

Data in Table 3.14 indicate that women's involvement in all the specified decisions increases with age, from a low of 14 percent among women age 15-19 to a high of 57 percent among women age 40-49. Divorced, separated, or widowed women are much more likely (74 percent) to be involved in all types of household decisions than currently married women (46 percent) and never-married women (13 percent). Women who have no children, those who reside in zoba Semenawi Keih Bahri, and those who are not employed are the least likely to participate in all the specified decisions. Cash employment appears to be related to increased involvement in decisionmaking. Nearly two-thirds of women who are employed for cash are involved in making all types of household decisions, compared with 47 percent of women who are employed but not paid in cash and 37 percent of unemployed women.

Women's Agreement with Reasons for Wife Beating

To assess women's attitudes towards wife beating, women interviewed in the EDHS were asked whether a husband would be justified in beating his wife in each of the following five situations: if the wife burns the food; if she argues with him; if she goes out without informing him; if she neglects the children; and if she refuses to have sex with him. The results are summarized in Table 3.15. The last column gives the percentage of women who feel that a husband is justified in beating his wife for at least one of the specified reasons.

A sizable majority of women (71 percent) believe that a husband is justified in beating his wife for at least one of the specified reasons. This is not surprising because in Eritrea—as in many other countries—battery against women is traditionally accepted, tolerated, and rationalized. More than half of women believe that a husband is justified in beating his wife if she goes out without telling him or if she neglects the children. Slightly smaller percentages agree that if a woman refuses to have sex with her husband (48 percent) or argues with him (45 percent), then he is justified in beating her. Only 29 percent of women feel that a husband is justified in beating his wife if she burns the food.

The percentage of women who agree with at least one of the reasons justifying a husband beating his wife is higher among older women, divorced, separated, or widowed women, and those with more children. Seventy-eight percent of rural women agree with at least one of the reasons justifying a husband beating his wife, compared with 61 percent among urban women. The percentage is lowest in Asmara, where just over half of women believe that wife beating is justified for at least one reason. Women in zoba Debub are more likely to say that wife beating is justified than other women, with 86 percent agreeing that a man is justified in beating his wife for one or more of the given reasons, compared with only 59 percent of women in zoba Maekel. Differences are also notable by level of education; less than half of women with some secondary education agree with at least one specified reason for wife beating, compared with over three-fourths of women with primary education or no education. Women who are employed for cash are less likely to agree with one of the reasons for wife beating than those who are either not employed or employed but not for cash. Women in the highest quintile of the wealth index are also less accepting of wife beating than other women.

Table 3.15 Women's attitude toward wife beating

Percentage of women who agree that a husband is justified in hitting or beating his wife for specific reasons, according to background characteristics, Eritrea 2002

Background characteristic	Husband is justified in hitting or beating his wife if she: Burns the food	Argues with him	Goes out without telling him	Neglects the children	Refuses to have sex with him	Agrees with at least one specified reason	Number of women
Age							
15-19	30.2	41.9	49.4	51.7	42.8	69.9	2,001
20-24	28.1	43.7	49.7	49.1	44.6	68.6	1,454
25-29	26.1	42.7	49.6	49.0	46.6	69.1	1,543
30-34	29.2	47.0	53.9	51.8	50.5	71.5	1,109
35-39	28.7	44.8	52.0	50.6	50.4	70.9	1,085
40-44	31.4	47.9	54.8	50.4	52.1	73.0	827
45-49	33.0	49.8	58.3	56.6	58.0	76.1	734
Marital status							
Never married	23.9	32.8	39.9	44.9	32.8	61.4	2,044
Married or living together	30.9	48.7	55.6	52.2	52.6	73.1	5,733
Divorced/separated/widowed	29.8	44.7	53.1	56.4	51.5	75.9	977
Number of living children							
0	26.4	38.6	45.9	47.2	39.0	65.9	3,019
1-2	28.6	44.8	51.2	51.0	48.7	70.8	2,287
3-4	29.7	46.4	54.8	52.8	52.1	73.2	1,772
5+	34.2	53.2	59.3	55.8	58.1	76.6	1,677
Residence							
Total urban	22.2	30.4	39.2	43.7	34.3	61.1	3,767
Asmara	19.0	23.8	31.8	41.0	28.9	56.0	1,899
Other towns	25.4	37.0	46.8	46.3	39.8	66.3	1,868
Rural	34.4	55.3	61.0	56.5	58.1	77.9	4,987
Zoba							
Debubawi Keih Bahri	29.9	44.2	48.9	45.9	42.4	65.4	324
Maekel	21.0	27.6	36.4	43.7	32.8	59.2	2,264
Semenawi Keih Bahri	25.1	43.7	48.7	46.1	47.3	66.2	1,148
Anseba	16.2	42.3	51.2	41.8	47.1	66.7	1,130
Gash-Barka	26.0	48.4	55.3	48.8	50.8	72.1	1,500
Debub	46.8	59.8	65.8	66.5	61.7	85.5	2,388
Education							
No education	33.8	55.1	61.5	55.2	58.3	77.5	4,384
Primary	32.6	46.4	54.2	55.6	51.3	75.6	1,637
Middle	28.2	38.1	50.3	53.1	40.6	70.9	974
Secondary +	14.9	20.1	25.5	35.0	22.7	49.0	1,760
Employment							
Not employed	29.0	45.5	52.8	50.8	49.0	71.1	7,011
Employed for cash	26.5	36.7	43.6	49.3	39.7	65.8	1,356
Employed not for cash	42.2	56.0	60.5	60.8	56.6	80.8	375
Number of decisions in which woman has final say[1]							
0	33.3	48.6	56.0	56.1	49.0	75.4	683
1-2	25.2	40.7	47.6	47.0	42.0	67.0	2,414
3-4	29.6	49.4	55.5	53.2	54.4	76.3	1,813
5	30.7	44.0	51.6	51.5	48.2	69.5	3,844
Wealth index							
Lowest	28.6	54.0	59.0	50.5	55.4	74.1	1,472
Second	34.3	56.7	62.6	56.3	59.2	78.9	1,626
Middle	39.2	55.6	60.9	60.6	57.7	79.0	1,674
Fourth	28.7	41.3	49.6	50.9	44.7	70.6	1,833
Highest	18.2	23.1	32.9	39.8	29.1	55.8	2,149
Total	29.1	44.6	51.7	51.0	47.9	70.7	8,754

Note: Total includes 12 women with missing information on employment who are not shown separately.

[1] Herself or jointly with others

FERTILITY 4

This chapter presents the 2002 EDHS results on the levels, differentials, patterns, and trends in fertility. It also presents information on children ever born and living, the length of birth intervals, the age at which women initiate childbearing, and levels of adolescent fertility in Eritrea. Knowledge of current and cumulative fertility is central to population dynamics because it plays a major role in changing the size and age structure of a population. It is also essential in monitoring the progress and evaluating the impact of population and health programs in Eritrea.

The fertility indicators discussed in this chapter are based on the reproductive history provided by women age 15-49 in the 2002 EDHS. All women interviewed in the survey were asked to report the total number of sons and daughters to whom they have given birth during their lifetime. To encourage complete reporting, women were asked separately about the number of children still living at home, those living away from home, and those who had died. A complete history of live births was then obtained; this included: name, sex, date of birth, and if dead, age at death, or if alive, age of child.

4.1 CURRENT FERTILITY

The most commonly used measures of current fertility are the total fertility rate (TFR) and its component age-specific fertility rates[1] (ASFRs). The TFR is a summary measure of fertility and is interpreted as the number of children a woman would have in her lifetime if she were to experience the currently observed ASFRs throughout her reproductive years (age 15-49). The ASFRs are a valuable measure of the age pattern of childbearing. They are defined in terms of the number of live births among women in a particular age group divided by the number of woman-years in that age group during the specified period.

The other aggregate measures of fertility presented in this chapter are the general fertility rate (GFR) and the crude birth rate (CBR). The GFR is the annual number of births in a population per 1,000 women age 15-44, and the CBR refers to the total number of births occurring in a given year per 1,000 population. Table 4.1 presents the ASFRs and the aggregate fertility measures (TFR, GFR, and CBR) for Eritrea as a whole, by residence (total urban, Asmara, other towns, and rural), and by zoba. The ASFRs and the aggregate fertility measures presented in Table 4.1 are based on births that occurred during the three years preceding the survey, which roughly corresponds to early 1999 to early 2002. The three-year period was chosen for calculating these rates because it reflects the current situation while also allowing the rates to be calculated without compromising the statistical precision of estimates.

At the age-specific fertility rates prevailing in the three-year period before the survey, an Eritrean woman would have, on average, 4.8 children during her reproductive life span. Among the 21 other sub-Saharan countries in which DHS surveys have been conducted since 1997, Cameroon (1998) has the same TFR as Eritrea and six other countries have lower TFRs than Eritrea (Figure 4.1).

[1] Numerators for the age-specific fertility rates are calculated by summing the number of live births that occurred 1-36 months preceding the survey (determined by the date of interview and birth date of the child), and classifying them by age (in five-year groups) of the mother at the time of birth (determined by the mother's birth date). The denominators of the rates are the number of woman-years lived in each of the specified five-year age groups during the 1-36 months preceding the survey.

Table 4.1 Current fertility

Age-specific fertility rates, total fertility rate, general fertility rate, and crude birth rate for the three years preceding the survey, by residence and Zoba, Eritrea 2002

	Residence				Zoba						
Age and rate	Total urban	Asmara	Other towns	Rural	Debubawi Keih Bahri	Maekel	Semenawi Keih Bahri	Anseba	Gash-Barka	Debub	Total
Age											
15-19	51	37	68	97	88	41	82	76	100	94	77
20-24	145	127	164	218	169	133	201	211	209	202	185
25-29	172	167	178	228	185	181	199	237	218	206	204
30-34	144	100	181	221	158	129	195	256	200	200	188
35-39	123	112	134	195	104	118	140	224	172	198	167
40-44	42	46	36	121	52	61	61	89	75	142	88
45-49	20	8	34	62	19	20	25	36	48	91	46
Rate											
TFR	3.5	3.0	4.0	5.7	3.9	3.4	4.5	5.6	5.1	5.7	4.8
GFR	116	98	134	182	135	109	156	184	168	172	153
CBR	28	27	29	35	34	27	33	35	34	34	32

Note: Rates are for the period 1-36 months preceding the survey. Rates for age group 45-49 may be slightly biased due to truncation.
TFR: Total fertility rate for ages 15-49, expressed per woman
GFR: General fertility rate (births divided by number of women 15-44), expressed per 1,000 women
CBR: Crude birth rate, expressed per 1,000 population

Figure 4.1
Total Fertility Rate, Eritrea Compared with Other Sub-Saharan Countries

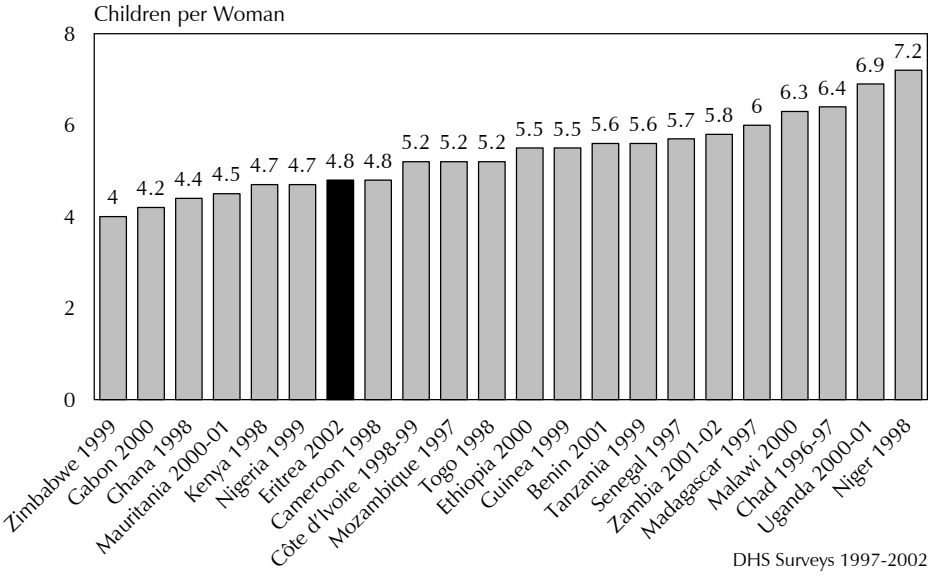
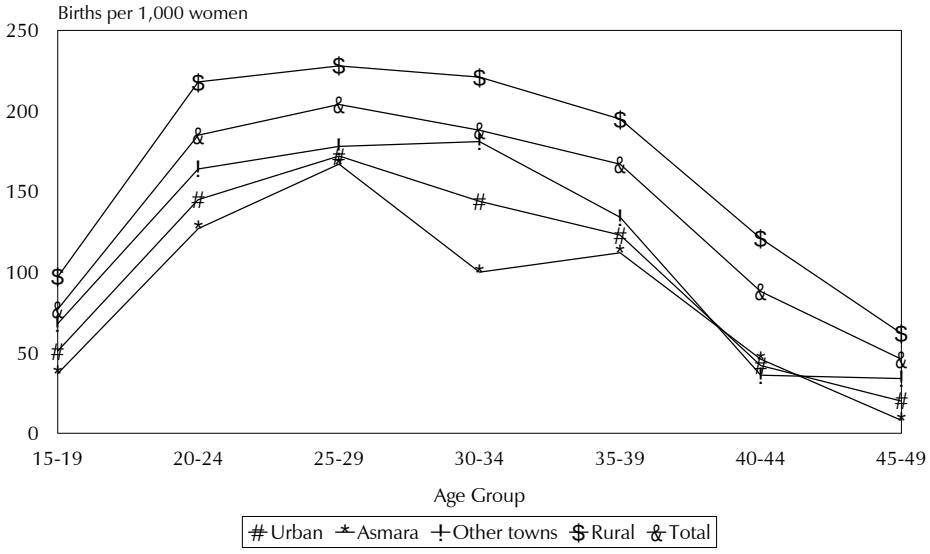


Table 4.1 shows that the fertility level among urban women is substantially lower than that among rural women, a pattern that exists in all sub-Saharan countries. The TFR for rural women is 5.7 children, indicating that rural women have 2.7 more children than women in Asmara (3.0) and 1.7 more children than women in other towns (4.0). As the ASFRs show, this pattern of lower urban fertility is prevalent in all age groups (Figure 4.2). The difference in urban and rural fertility is relatively more pronounced among younger women (under 20 years of age) and older women (35 years and above)—age groups that are at greater risk of pregnancy complications than women 20-34. Rural women over age 39, on average, have thrice as many births as urban women.

An examination of the patterns of fertility for various age groups in Table 4.1 indicates that although some women begin childbearing at an early age in Eritrea, the pattern is not common. Fertility rises rapidly to reach a peak in the age group 25-29, after which it declines with increasing age. Eritrean women have high fertility in their twenties and early thirties. The fertility age pattern observed for Eritrea as a whole generally holds true by residence also. The peak of childbearing among women for all urban areas, Asmara, and rural areas is age 25-29. However, for other towns, the childbearing peak occurs at age 30-34. Moreover, in all urban areas, and more clearly in Asmara, fertility declines rapidly after age 29, whereas in rural areas childbearing is consistently high from age 20-24 to 30-34 and the decline is more gradual. Similar fertility age patterns were observed in the 1995 EDHS.

The contribution of teenage fertility to total fertility is 8 percent. At current age-specific fertility rates, an Eritrean woman would have, on average, nearly half of her lifetime births (2.3) by age 30 and two-thirds (3.3) by age 35. She would have two births considered high-risk[2]—"too early" (before age 20) or "too late" (after age 35). Rural women in these elevated-risk categories would have twice as many births as their urban counterparts.

Figure 4.2
Age-Specific Fertility Rates by Residence



EDHS 2002

[2] The categories of births defined as high-risk are discussed in Section 8.5 of Chapter 8.

The ASFRs for zobas show a pattern similar to that of the nation as a whole. However, in zoba Semenawi Keih Bahri, childbearing is uniform in the twenties and early thirties, while in zoba Anseba it peaks at age 30-34.

The GFR and CBR are 153 per 1,000 women age 15-44 and 32 per 1,000 population, respectively. The GFR and CBR also vary by residence. With a GFR of 182, the average annual number of births to rural women is 57 percent higher than that for urban women (116), almost twice as high as for women in Asmara (98), and 36 percent higher than that for women in other towns (134). Similarly, the CBR in rural areas (35) is higher than in urban areas (27-29).

4.2 FERTILITY DIFFERENTIALS

Current fertility varies by background characteristics of women. The study of current fertility differentials is based on the TFR and the percentage of women currently pregnant. A comparison of the TFR and completed or past fertility in terms of the mean number of children ever born (CEB) to women age 40-49 is also presented.

Table 4.2 and Figure 4.3 present differentials in fertility by residence, zoba, education, and wealth index. The differentials in fertility by residence have already been discussed. A substantial variation in TFR also exists among zobas, ranging from 5.7 children per woman in zoba Debub to 3.4 children per women in zoba Maekel. The level of fertility is negatively associated with educational attainment, decreasing rapidly from 5.5 children among women with no education to 3.1 children among women who have at least some secondary education. An even sharper variation is observed by wealth index. Women in the lowest quintile of the wealth index have a TFR of 6.2, which is twice as high as the fertility level of women in the highest quintile (3.0).

Table 4.2 shows the mean number of children ever born to women by the end of their reproductive period (40-49 years), which is a measure of average completed fertility. Although this measure is susceptible to omission of children born to older women, it allows a general assessment of trends in fertility over

Table 4.2 Fertility by background characteristics

Total fertility rate for the three years preceding the survey, percentage of women 15-49 currently pregnant, and mean number of children ever born to women age 40-49, by background characteristics, Eritrea 2002

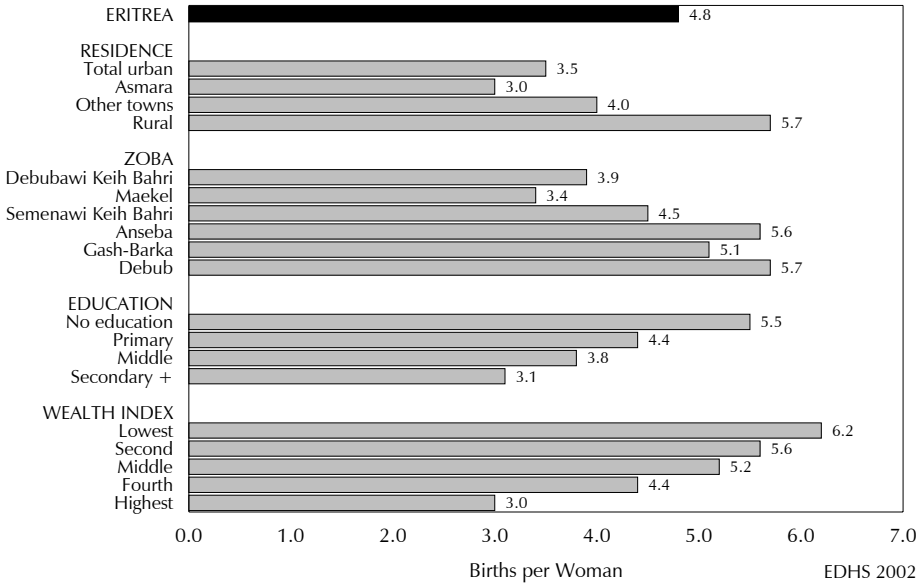
Background characteristic	Total fertility rate[1]	Percentage currently pregnant[1]	Mean number of children ever born to women age 40-49
Residence			
Total urban	3.5	7.0	4.8
Asmara	3.0	6.0	4.3
Other towns	4.0	8.1	5.4
Rural	5.7	10.2	6.6
Zoba			
Debubawi Keih Bahri	3.9	8.9	5.1
Maekel	3.4	7.1	4.8
Semenawi Keih Bahri	4.5	8.9	5.8
Anseba	5.6	8.8	6.3
Gash-Barka	5.1	10.2	6.3
Debub	5.7	9.5	6.6
Education			
No education	5.5	10.5	6.3
Primary	4.4	9.1	5.3
Middle	3.8	5.5	5.4
Secondary +	3.1	6.2	3.5
Wealth index			
Lowest	6.2	11.0	7.0
Second	5.6	10.3	6.2
Middle	5.2	9.8	6.5
Fourth	4.4	7.3	5.1
Highest	3.0	6.8	4.5
Total 2002	**4.8**	**8.8**	**5.9**
Total 1995	6.1	9.2	6.2

[1] Women age 15-49

time among population subgroups. One way of examining trends in fertility over time is to compare the total fertility rate (current fertility) for the three years preceding the survey with completed fertility (past fertility). If fertility is stable over time in a population, the TFR and the mean CEB for women age 40-49 will be similar. An overall comparison of these two fertility measures suggests a decline of more than one child over the past few years, from 5.9 to 4.8 children. Fertility has declined in both urban and rural areas, in all zobas, at all educational levels, and for all levels of the household wealth index. The difference between the level of current and completed fertility is highest in zoba Maekel (1.4 children), women in the highest quintile of the wealth index (1.5 children), and women with middle-level education (1.6 children).

Another indicator of current fertility, the percentage of women who are currently pregnant is included in Table 4.2. Overall, 9 percent of the 2002 EDHS respondents were pregnant at the time of the survey. The proportion has declined slightly since 1995. The proportion of currently pregnant women is lower in urban areas (7 percent)—with Asmara having the lowest proportion (6 percent)—than in rural areas (10 percent). Women in zoba Gash-Barka, women with no education, and women in the two lowest quintiles of the wealth index are more likely to be pregnant (10-11 percent) than other women.

Figure 4.3
Total Fertility Rates by Background Characteristics



4.3 FERTILITY TRENDS

Besides the comparison of current and completed fertility, trends in fertility can be assessed in two ways. First, the TFRs from the current survey can be compared with estimates obtained in earlier surveys. Second, fertility trends can be investigated using retrospective data from the same survey.

Comparison with the 1995 EDHS

Table 4.3 presents the ASFRs and TFRs from the 2002 EDHS and 1995 EDHS surveys. The table shows that fertility has declined since the last survey from 6.1 children per woman to 4.8 children, a drop of 21 percent. Urban fertility has declined from 4.2 to 3.5 children per woman or 17 percent, while the rural fertility has declined even more (19 percent), more than one child—from 7.0 to 5.7 children—over the same period. Although not shown in Table 4.3, Asmara experienced a smaller decline in fertility from

3.7 to 3.0, but the percent decline in Asmara is the same as in rural areas. The percent decline is highest in other towns, 22 percent (from 5.1 to 4.0 children).

Table 4.3 Trends in fertility

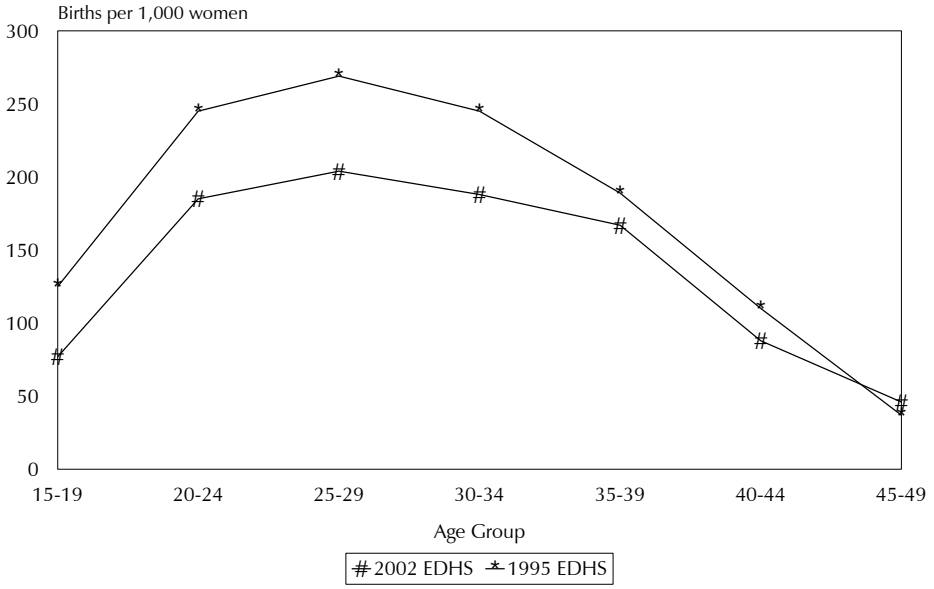
Age-specific fertility rates and total fertility rates (TFR) for the three years preceding the survey, by residence, Eritrea 1995 and 2002

	Urban		Rural		Total	
Age	2002	1995	2002	1995	2002	1995
15-19	51	52	97	171	77	125
20-24	145	161	218	282	185	245
25-29	172	215	228	290	204	269
30-34	144	200	221	267	188	245
35-39	123	115	195	224	167	189
40-44	42	83	121	121	88	110
45-49	20	21	62	45	46	37
TFR	3.5	4.2	5.7	7.0	4.8	6.1

Note: Age-specific fertility rates are per 1,000 women.

Table 4.3 and Figure 4.4 show that the fertility decline has been experienced by women of all reproductive ages except those in the oldest age group (45-49), where a slight increase in fertility has occurred. (It should be noted that ASFRs for the youngest and the oldest age groups are unstable because of small number of births.) The decline has been more rapid among women under age 35, and most notably among adolescents (38 percent). Fertility has been reduced by around 24 percent among women in the prime reproductive ages (age groups 20-24, 25-29, and 30-34).

Figure 4.4
Trends in Age-Specific Fertility Rates, 1995 EDHS and 2002 EDHS



The pattern of fertility decline by age is seen in both urban and rural areas. In urban areas, the decline ranges from a high of 49 percent among women age 40-44 to a low of 2 percent among those age 15-19. A small increase in fertility, however, is observed for urban women age 35-39 years. In contrast, rural adolescents have the highest decline (43 percent), followed by women in age groups 20-24 and 25-29 years (23 percent and 21 percent, respectively).

Retrospective Data from 2002 Birth Histories

Another way of examining trends in fertility over time is to compare age-specific fertility rates from the 2002 EDHS for successive five-year periods preceding the survey, as presented in Table 4.4. Because women age 50 and over were not interviewed in the survey, the rates are increasingly truncated as the number of years before the survey increases. For example, the rates cannot be calculated for women age 35-39 for the period 15-19 years before the survey, because these women would have been over age 50 at the time of the survey and were not interviewed. Partially truncated rates are enclosed in brackets in the table.

Table 4.4 Trends in age-specific fertility rates

Age-specific fertility rates for five-year periods preceding the survey, by mother's age at the time of the birth, Eritrea 2002

Mother's age at time of the birth	Number of years preceding the survey			
	0-4	5-9	10-14	15-19
15-19	85	127	111	95
20-24	199	253	251	211
25-29	214	295	296	259
30-34	213	287	298	[288]
35-39	183	228	[273]	
40-44	102	[165]		
45-49	[51]			

Note: Age-specific fertility rates are per 1,000 women. Estimates in brackets are truncated.

It should be noted that misreporting of dates of birth of children could result in incorrect trends in fertility. Nevertheless, the results presented in the table provide further insights into the fertility decline documented above. The data indicate a 12 percent decline in fertility among women age 15-29, from 2.8 children per women during the period 15-19 years before the survey to 2.5 children per woman during the period 0-4 years prior to the survey. The ASFRs suggest that most of the fertility decline among younger women (15-29) occurred between the two most recent five-year periods. A 26 percent decline in fertility among women age 15-29 took place between 5-9 and 0-4 years before the survey. With the exception of the two younger age groups (i.e., 15-19 and 20-24), which show slight increases for the period 10-14 to 5-9 years prior to the survey, a decline in fertility over the last 15 years has occurred in all age groups. As indicated earlier, during the two most recent five-years periods (5-9 to 0-4 preceding the survey), the decline is highest for adolescents (15-19), 33 percent, and lowest for women in the age group 35-39 (20 percent).

The decline in fertility in Eritrea cannot be attributed to an increasing use of contraception because the contraceptive prevalence rate has remained unchanged since 1995. Reduced levels of sexual activity (see Chapter 6), increases in the median birth interval (see section 4.5), and lower proportions of currently married women in the prime reproductive ages (see Chapter 6), are the primary factors responsible for the decline in fertility.

4.4 CHILDREN EVER BORN AND LIVING

Information on lifetime fertility is useful for examining the momentum of childbearing and for estimating levels of primary infertility. As mentioned above, the number of children ever born is useful in understanding the changes that have taken place in the age pattern of current fertility.

Table 4.5 shows the percent distribution of all women and currently married women by the number of children ever born, according to age. It also shows the mean number of children ever born and mean number of living children. The difference between the mean number of children ever born and the mean number of living children is an indicator of the level of mortality in the population. On average, Eritrean women age 15-49 have given birth to 2.7 children, of which 2.3 children are still alive, indicating that 14 percent of the children ever born have died. The mean number of children ever born has declined by 10 percent from 3.0 children reported in the 1995 EDHS. The number of children that women have borne increases with age, from 0.1 children for women age 15-19 to more than two children for women in the late twenties, about five children for women in the late thirties, and to more than six children for women at the end of their reproductive years (45-49). Of the 6.2 children ever born to women age 45-49, only 5.0, or about 81 percent, have survived.

A similar pattern of lifetime fertility is observed for currently married women except that the mean number of children ever born is higher for currently married women than for all women at all ages, particularly for women at younger and older ages. The difference between currently married women and all women in the mean number of children ever born to younger women is due to a substantial proportion of unmarried young women having minimal fertility. Differences at older ages generally reflect the impact of marital dissolution through either divorce or widowhood.

The distribution of women by children ever born shows that among all women only one in ten age 15-19 has already become a mother, indicating that early childbearing is not common in Eritrea. Six in ten women age 45-49 have had six or more children, indicating a pronatalist tendency. There is a sharp

Table 4.5 Children ever born and living

Percent distribution of all women and currently married women by number of children ever born, mean number of children ever born, and mean number of living children, according to age, Eritrea 2002

Age	Number of children ever born											Total	Number of women	Mean number of children ever born	Mean number of living children
	0	1	2	3	4	5	6	7	8	9	10+				
ALL WOMEN															
15-19	89.0	9.2	1.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	2,001	0.13	0.12
20-24	43.5	26.9	18.6	8.3	2.3	0.4	0.0	0.0	0.0	0.0	0.0	100.0	1,454	1.00	0.91
25-29	18.3	17.9	22.2	21.5	13.3	4.6	1.9	0.2	0.1	0.0	0.0	100.0	1,543	2.16	1.97
30-34	9.4	9.2	14.2	15.5	20.1	13.9	9.7	5.0	1.9	0.5	0.6	100.0	1,109	3.53	3.13
35-39	5.3	6.0	8.9	12.2	11.5	16.4	15.1	11.9	8.0	3.3	1.3	100.0	1,085	4.70	4.09
40-44	3.1	5.1	7.3	8.1	10.0	10.2	17.1	11.3	11.6	8.6	7.6	100.0	827	5.66	4.73
45-49	3.4	3.3	6.0	8.7	9.0	9.5	11.0	12.1	11.8	11.4	13.9	100.0	734	6.20	5.04
Total 2002	**33.2**	**12.4**	**11.5**	**10.2**	**8.4**	**6.4**	**6.0**	**4.2**	**3.3**	**2.2**	**2.1**	**100.0**	**8,754**	**2.66**	**2.30**
Total 1995	28.9	13.6	10.8	9.6	7.9	7.3	6.4	5.1	4.5	2.9	3.1	100.0	5,054	3.01	2.46
CURRENTLY MARRIED WOMEN															
15-19	66.5	27.6	5.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	580	0.40	0.37
20-24	23.8	33.2	26.8	12.3	3.2	0.6	0.0	0.0	0.0	0.0	0.0	100.0	950	1.40	1.27
25-29	8.4	16.6	25.1	25.4	16.2	5.6	2.4	0.2	0.1	0.0	0.0	100.0	1,212	2.52	2.30
30-34	4.2	6.8	13.2	16.2	22.0	16.4	11.4	6.1	2.2	0.6	0.8	100.0	904	3.94	3.51
35-39	2.7	4.4	7.7	10.6	11.6	18.1	17.0	13.8	8.7	4.0	1.6	100.0	899	5.09	4.42
40-44	2.4	3.6	5.2	6.6	9.4	9.8	17.6	12.9	13.8	10.1	8.6	100.0	663	6.08	5.09
45-49	2.1	2.1	2.7	4.7	6.8	8.3	11.3	15.0	14.3	14.6	18.1	100.0	526	7.01	5.83
Total 2002	**14.0**	**14.2**	**14.4**	**12.9**	**11.0**	**8.6**	**8.0**	**6.0**	**4.6**	**3.2**	**3.0**	**100.0**	**5,733**	**3.57**	**3.10**
Total 1995	11.5	15.0	12.7	11.9	10.1	9.2	8.3	6.7	6.3	4.1	4.2	100.0	3,371	3.92	3.22

decline in the proportion of early childbearing since 1995, from 19 percent to 11 percent, a decline of 40 percent.

Results in Table 4.5 indicate that childlessness decreases with increasing age. For teenagers (15-19 years of age), 89 percent among all women and 67 percent among currently married women have not started childbearing. Since the desire for children is nearly universal in Eritrea, the proportion of married women age 45-49 years who are still childless can be taken as a rough indicator of *primary infertility*, or the inability to bear children. The survey results suggest that primary infertility is low in Eritrea, with only 2 percent of Eritrean women not able to bear children. It should be pointed out that this estimate does not include women who have had one or more children but who are unable to have more children (*secondary infertility*).

4.5 BIRTH INTERVALS

The birth interval refers to the period of time between two successive live births. Information on birth intervals is important in providing insight into birth spacing patterns, which are known to have an impact on fertility as well as levels of infant and child mortality. Previous research has shown that children born too soon after a previous birth are at increased risk of poor health and dying at an early age. This is particularly true for babies born less than 24 months after a previous birth. Maternal health is also jeopardized when births are closely spaced.

Table 4.6 shows the percent distribution of second- and higher-order births in the five years preceding the survey by number of months since the previous birth, according to background characteristics. One in five non-first births in Eritrea occurs less than 24 months after the preceding birth, including 8 percent that occur after an interval of less than 18 months. In other words, the majority of Eritrean children (80 percent) are born at least 24 months after their previous sibling. Thirty-seven percent of second- and higher-order births take place 24-35 months after a prior birth, and 43 percent occur at least three years after the birth of a previous sibling. The overall median birth interval is 33.6 months, which is 10 months longer than the minimum of 24 months considered safe for mother and child. The median birth interval in 2002 is two months longer than the median birth interval of 31.3 months in 1995.

There is no substantial difference in the length of the median birth interval by sex of preceding birth, residence, or women's education level. The median birth interval for the seventh- and higher-order births is three months shorter than intervals for lower-order births. Birth intervals vary by zoba. The median birth interval in zobas Maekel and Gash-Barka is 35 months, which is 2-3 months longer than those in other zobas. The median birth interval increases with increasing age of the mother from 26 months for births to young mothers (age 15-19) to 35 months for births to mothers age 30 or older. The proportion of births occurring within 24 months of the preceding birth declines steeply from 47 percent among women age 15-19 to 20 percent among women age 40 and above.

The length of the birth interval is closely associated with the survival status of the previous sibling. The median birth interval is more than six months shorter for children whose previous sibling died than for children whose previous sibling is alive (28 months and 34 months, respectively). The percentage of births occurring after a very short interval (less than 18 months) is almost four times higher for children whose prior sibling died than for children whose prior sibling survived. The shorter intervals for the former group are partially due to the shortened period of breastfeeding (or no breastfeeding) for the preceding child, leading to an earlier return of ovulation and hence increased chance of pregnancy. Minimal use of contraception, presumably because of a desire to replace the dead child as soon as possible, could also be one of the factors responsible for the shorter birth interval in these cases. However, this reason is probably not as important in Eritrea as in other countries that have higher contraceptive prevalence rates.

Table 4.6 Birth intervals

Percent distribution of non-first births in the five years preceding the survey by number of months since preceding birth, according to background characteristics, Eritrea 2002

Background characteristic	Number of months since preceding birth					Total	Number of non-first births	Median number of months since preceding birth
	7-17	18-23	24-35	36-47	48+			
Age								
15-19	(20.0)	(26.5)	(25.6)	(26.0)	(2.0)	100.0	37	25.9
20-29	7.5	13.9	40.2	22.5	15.9	100.0	1,842	32.2
30-39	7.6	10.6	35.5	23.8	22.6	100.0	2,206	34.7
40-49	8.3	11.3	33.9	26.3	20.3	100.0	903	34.8
Birth order								
2-3	7.4	13.3	34.0	22.7	22.6	100.0	2,104	34.1
4-6	6.7	10.8	37.4	25.2	19.9	100.0	1,878	34.4
7+	10.5	11.9	41.7	23.4	12.5	100.0	1,006	31.5
Sex of preceding birth								
Male	7.5	12.2	37.6	22.8	19.9	100.0	2,556	33.4
Female	8.0	11.9	36.0	24.9	19.1	100.0	2,432	33.9
Survival of preceding birth								
Living	6.2	11.8	37.4	24.6	20.1	100.0	4,509	34.1
Dead	22.6	14.7	31.9	16.6	14.3	100.0	479	28.4
Residence								
Total urban	8.5	12.3	32.6	21.6	25.0	100.0	1,545	34.3
Asmara	11.6	13.2	28.8	18.7	27.7	100.0	589	34.4
Other towns	6.6	11.7	34.9	23.5	23.3	100.0	957	34.2
Rural	7.4	11.9	38.8	24.8	17.1	100.0	3,443	33.4
Zoba								
Debubawi Keih Bahri	13.3	12.9	31.4	18.7	23.7	100.0	140	32.2
Maekel	10.2	12.1	31.6	20.6	25.5	100.0	824	34.6
Semenawi Keih Bahri	7.2	13.8	37.0	22.9	19.1	100.0	711	32.7
Anseba	5.3	14.3	41.4	22.6	16.4	100.0	759	32.5
Gash-Barka	6.0	11.3	36.0	27.5	19.2	100.0	905	35.0
Debub	8.4	10.6	38.2	24.7	18.0	100.0	1,649	33.5
Education								
No education	7.2	12.4	37.7	24.1	18.6	100.0	3,409	33.5
Primary	7.2	9.7	37.4	25.6	20.1	100.0	880	34.3
Middle	10.2	14.1	33.9	18.9	22.8	100.0	254	33.4
Secondary +	11.8	12.8	30.9	20.7	23.9	100.0	446	33.6
Total 2002	**7.8**	**12.0**	**36.9**	**23.8**	**19.5**	**100.0**	**4,988**	**33.6**
Total 1995	11.0	14.6	39.0	20.3	15.1	100.0	3,296	31.3

Note: First-order births are excluded. The interval for multiple births is the number of months since the preceding pregnancy that ended in a live birth.
( ) Estimate based on 25-49 unweighted cases.

4.6 AGE AT FIRST BIRTH

A woman's age at the onset of childbearing is one of the factors that determine the level of current fertility in a population. Early initiation of childbearing leads to a longer reproductive period for the woman, which leads to a larger family size, which leads to rapid population growth, particularly in countries like Eritrea, where family planning is not widely practiced. Moreover, early age at first birth (under 20) has a detrimental effect on the health of both mother and child. A rise in the median age at first birth is generally a sign of transition to a lower fertility level.

Table 4.7 shows the percentage of women who have given birth by specific exact ages, and median age at first birth, according to current age. Early childbearing is not common in Eritrea; the majority of women become mothers after age 20. Six percent of women age 40-44, 4 percent of women age 45-49, and 1 percent of women age 15-19 had given birth to their first child before age 15. The age at first birth has been decreasing over time. For example, 47 percent of women age 45-49, compared to 62 percent of women age 25-29 had their first birth by age 22.

The median ages at first birth are 20.6 and 20.8 years for the age groups 25-29 and 30-34, respectively, and are higher (22-23 years) for older cohorts. The median age at first birth for women in most age groups has remained unchanged since the last survey with the exception of women age 45-49, for whom an increase of more than one year is indicated (from 21.1 years in 1995 to 22.5 years in 2002). This increase is not plausible because almost all married women in the age group 45-49 married many years ago.

Table 4.7 Age at first birth

Percentage of women who had their first birth by specific exact ages, and median age at first birth, according to current age, Eritrea 2002

Current age	Percentage of women who had their first birth by exact age: 15	18	20	22	25	Percentage who have never given birth	Number of women	Median age at first birth
15-19	1.0	na	na	na	na	89.0	2,001	a
20-24	4.9	25.4	42.4	na	na	43.5	1,454	a
25-29	3.4	22.0	44.3	61.8	76.4	18.3	1,543	20.6
30-34	4.2	24.6	42.7	59.2	77.0	9.4	1,109	20.8
35-39	3.0	17.4	32.1	50.5	73.5	5.3	1,085	21.9
40-44	6.2	17.0	32.4	49.3	70.8	3.1	827	22.1
45-49	3.6	17.3	32.2	46.7	64.4	3.4	734	22.5

na = Not applicable
[a] Omitted because less than 50 percent of women had a birth before reaching the beginning of the age group

Differentials in median age at first birth for women 25-49 by background characteristics are shown in Table 4.8. Younger women are not included in the analysis because less than 50 percent of women age 15-19 and 20-24 had a birth before age 15 and 20, respectively. The overall median age at first birth for women age 25-49 is 21 years. The median age at first birth has remained unchanged since the last survey but the median age in Eritrea is higher than that reported for some African countries in which recent DHS surveys have been conducted. For example, the median age at first birth is 19 years in Ethiopia (CSA and ORC Macro, 2001), Uganda (UBOS and ORC Macro, 2001), and Malawi (NSO and ORC Macro, 2001), and 20 years in Nigeria (NPC, 2000).

Table 4.8 Median age at first birth by background characteristics

Median age at first birth among women 25-49, by current age and background characteristics, Eritrea 2002

Background characteristic	Current age					Women age 25-49
	25-29	30-34	35-39	40-44	45-49	
Residence						
Total urban	21.9	21.7	22.3	22.7	21.9	22.0
Asmara	23.7	24.7	23.5	23.4	21.7	23.5
Other towns	20.3	20.5	21.4	21.8	22.0	20.9
Rural	19.8	20.3	21.7	21.9	23.0	21.0
Zoba						
Debubawi Keih Bahri	22.1	22.4	22.8	22.2	23.2	22.4
Maekel	22.9	23.1	23.1	23.2	21.7	22.9
Semenawi Keih Bahri	21.1	21.1	21.5	21.5	23.9	21.5
Anseba	19.7	21.2	22.0	22.3	23.6	21.2
Gash-Barka	19.7	20.5	21.4	21.0	21.1	20.6
Debub	19.6	19.7	21.5	22.7	23.0	20.7
Education						
No education	19.7	20.4	21.6	21.9	22.9	21.1
Primary	19.9	20.2	20.9	21.8	22.1	20.7
Middle	20.5	(20.9)	(24.7)	*	*	21.3
Secondary +	24.4	25.3	25.5	23.7	*	24.6
Wealth index						
Lowest	19.7	20.5	21.6	21.7	23.0	21.1
Second	19.7	20.6	21.7	22.2	22.8	21.1
Middle	19.8	19.6	21.5	21.7	23.3	20.8
Fourth	20.3	20.3	21.9	21.9	21.1	20.8
Highest	23.6	23.8	23.0	23.0	22.0	23.1
Total 2002	**20.6**	**20.8**	**21.9**	**22.1**	**22.5**	**21.4**
Total 1995	20.9	20.8	22.1	22.0	21.1	21.4

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

The median is higher for women in urban areas than women in rural areas or other towns, a difference of one year (22 and 21 years, respectively). The urban-rural difference is highest (2 years) for women in the younger age groups, 25-29 and 30-34. Women in Asmara (24 years) start childbearing almost three years later than women in other towns (21 years) and in rural areas (21 years). Zoba Maekel has the highest median age at first birth (23 years), followed closely by zoba Debubawi Keih Bahri (22 years). Zobas Gash-Barka and Debub have the lowest median age at first birth (21 years). There is almost no difference in median age at first birth between women who have never attended school and those with primary and middle levels of education. However, women with at least some secondary education begin childbearing 3-4 years later than less educated and uneducated women. Women in the highest wealth quintile have a median age at first birth of 23 years; this is at least two years later than women in the other four wealth quintiles.

4.7 ADOLESCENT FERTILITY

The issue of adolescent fertility is important for both health and social reasons. Children born to very young mothers (under 20 years of age) face an increased risk of illness and death. Adolescent

mothers themselves are more likely than more mature women to suffer from severe complications during pregnancy and delivery, leading to maternity-related mortality. Moreover, the ability of teenage mothers to advance in the areas of educational attainment and job opportunities may be curtailed.

The percentage of adolescent women (age 15-19) who are mothers or who are pregnant with their first child is shown in Table 4.9. The level of teenage childbearing in Eritrea is 14 percent, of which 3 percent are pregnant with their first child. Teenage fertility has declined substantially in Eritrea. Adolescent childbearing in 2002 was 39 percent lower than that reported in 1995, when the proportion of teenagers who had begun childbearing was 23 percent.

The proportion of teenagers on the family formation path rises rapidly with age. Only 2 percent of women age 15 have started childbearing, but by age 19, 36 percent of women have had a baby or are pregnant with their first child. Compared with the 1995 EDHS results, teenage childbearing has declined for all ages (Figure 4.5); the largest decline in childbearing occurred among women age 16 (78 percent), followed by women age 17 (64 percent). In rural areas, the level of teenage childbearing (19 percent) is more than twice as high as in urban areas (8 percent). Women in Asmara have the lowest level of teenage childbearing (4 percent). Early motherhood has remained unchanged in urban women, indicating that the decline in teenage childbearing at the national level is mainly due to the decline in early childbearing among rural women. In 1995, one in three rural teenagers had started childbearing, compared with one in five in 2002, a decline of more than 40 percent.

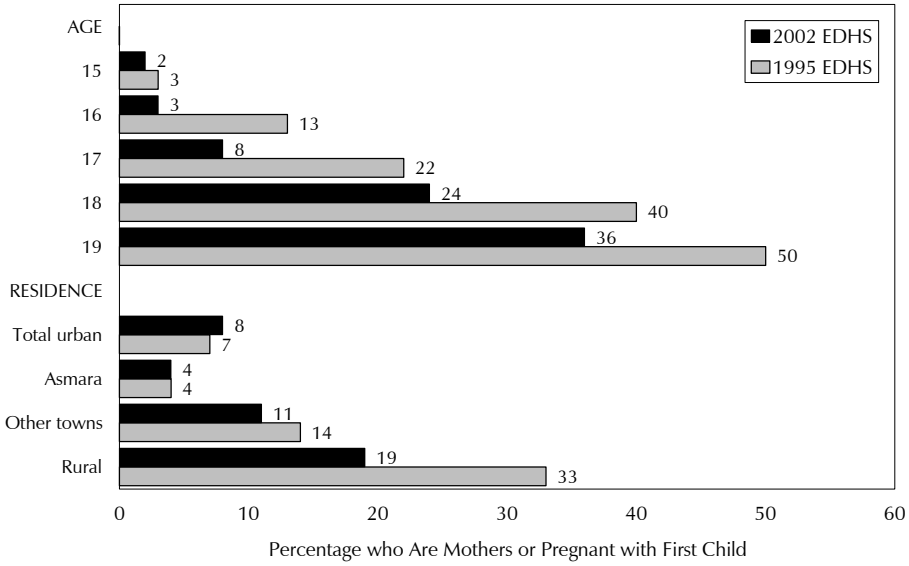
A negative correlation between women's education and early motherhood is apparent from the survey results. The proportion of women age 15-19 who are pregnant or who have already given birth decreases from 25 percent among women with no education to 7 percent among women with at least some secondary education. Childbearing among teenagers is lowest in zoba Maekel (6 percent) and highest in zobas Debub and Gash-Barka (21 percent and 20 percent, respectively). Differentials by wealth index show an increase in adolescent childbearing from 13 percent among women in the lowest quintile to 23 percent among women in the middle quintile, then declines to 5 percent among women in the highest quintile.

Table 4.9 Teenage pregnancy and motherhood

Percentage of women age 15-19 who are mothers or pregnant with their first child, by background characteristics, Eritrea 2002

Background characteristic	Percentage who are:		Percentage who have begun child-bearing	Number of women
	Mothers	Pregnant with first child		
Age				
15	0.9	1.2	2.1	426
16	2.2	0.6	2.8	424
17	6.1	1.8	7.9	326
18	19.4	4.7	24.0	546
19	29.0	7.3	36.3	280
Residence				
Total urban	6.5	1.1	7.6	917
Asmara	3.7	0.6	4.3	456
Other towns	9.3	1.6	10.9	461
Rural	14.7	4.6	19.3	1,084
Zoba				
Debubawi Keih Bahri	12.0	1.7	13.7	56
Maekel	4.7	1.6	6.3	564
Semenawi Keih Bahri	7.1	4.0	11.1	196
Anseba	8.3	1.3	9.6	266
Gash-Barka	17.5	2.8	20.3	304
Debub	15.9	4.8	20.7	616
Education				
No education	20.1	5.2	25.3	424
Primary	12.0	4.2	16.2	487
Middle	8.3	2.6	10.9	510
Secondary +	5.8	0.7	6.5	580
Wealth index				
Lowest	9.5	3.7	13.2	298
Second	14.7	5.2	19.9	362
Middle	18.0	5.4	23.3	377
Fourth	10.7	1.0	11.7	448
Highest	4.4	0.9	5.4	516
Total 2002	**11.0**	**3.0**	**14.0**	**2,001**
Total 1995	18.8	4.2	23.0	1,129

Figure 4.5
Trends in Adolescent Fertility by Age and Residence, 1995 EDHS and 2002 EDHS



FERTILITY REGULATION 5

This chapter presents the 2002 EDHS results regarding various aspects of contraceptive knowledge, attitudes, and behavior. The chapter starts with data on knowledge of contraceptive methods and sources of contraceptive methods, on the channels through which Eritrean women receive information about family planning, and the acceptability of electronic media providing information about family planning. Then interpersonal communication about family planning and attitudes toward use of family planning are discussed. After presenting knowledge of, and attitudes toward family planning, levels of ever-use and current use of family planning methods and sources of methods are examined. The last part of the chapter focuses on women who are not using family planning and covers the following topics: reasons for nonuse, intention to use in the future, preferred methods for women who intend to use in the future, and the main reasons for not planning to use in the future. The chapter closes with an evaluation of the role of health facilities in motivating nonusers to adopt family planning.

5.1 KNOWLEDGE OF CONTRACEPTIVE METHODS AND SOURCES

Knowledge of Methods

Knowledge of contraceptive methods and knowledge of sources of contraceptives are preconditions for their use. Information on knowledge of family planning methods was collected by first asking the respondent to name ways or methods by which a couple could delay or avoid pregnancy. If the respondent failed to mention any of the methods listed in the questionnaire, the interviewer described the method and asked whether she had heard about it. No questions were asked to elicit information on the depth of knowledge of any method except for periodic abstinence. Because married women have the greatest level of exposure to the risk of pregnancy, the following presentation places more emphasis on this group.

The results in Table 5.1 show that almost nine in ten women know of at least one modern method of family planning. Knowledge of methods is almost universal among sexually active unmarried women. The pill, male condoms, and injectables are the most widely known modern methods among all subgroups. Four in five currently married women know about the pill, and three-fourths know about condoms and injectables. Female sterilization and IUDs are equally likely to be known by currently married respondents–almost 25 percent each. Nineteen percent of currently married women know about female condoms. Knowledge of other modern methods is low.

Traditional methods are not as well known as the modern methods. Among currently married women, the lactational amenorrhea method (LAM)[1] is the most commonly known traditional method (50 percent). Thirty-six percent of women know about periodic abstinence and 13 percent mentioned withdrawal. Knowledge of most modern and traditional methods is higher among all women and unmarried women, especially among those who ever had sex, than among currently married women.

Knowledge of family planning methods in general and of specific methods has increased since the 1995 EDHS (Figure 5.1). Among all women and currently married women, overall awareness of any method and any modern method has increased by at least 20 percentage points. The most notable increases in knowledge of specific methods among currently married women are for condoms and the

[1] LAM is categorized as a traditional method in this survey because while 2 percent of currently married women said they were using LAM, less than 1 percent fit the criteria for LAM users.

injectables–from 35 percent to 75 percent for condoms and from 51 percent to 74 percent for injectables. The mean number of methods known by all women increased by almost two methods from 2.6 in 1995 to 4.4 in 2002.

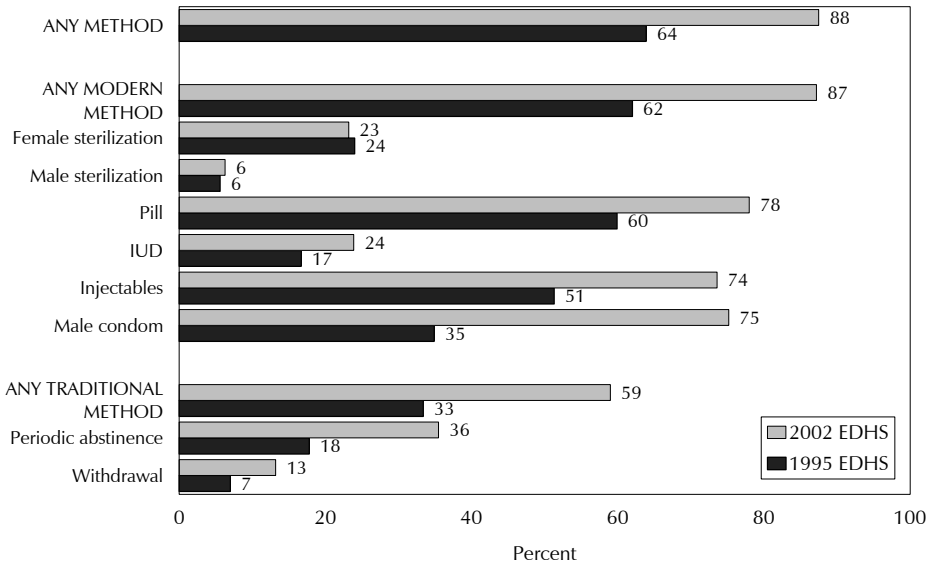
Table 5.1 Knowledge of contraceptive methods

Percentage of all women, of currently married women, of sexually active unmarried women, of sexually inactive unmarried women, and of women with no sexual experience who know any contraceptive method, by specific method, Eritrea 2002

Contraceptive method	All women	Currently married women	Unmarried women who ever had sex		Unmarried women who never had sex
			Sexually active[1]	Not sexually active[2]	
Any method	88.9	87.5	99.3	90.8	91.5
Any modern method	87.2	85.0	99.3	89.7	91.3
Female sterilization	23.8	23.2	33.6	30.3	21.8
Male sterilization	7.1	6.3	14.0	5.9	9.8
Pill	78.7	78.0	88.0	80.1	79.5
IUD	24.7	23.9	42.1	28.0	24.5
Injectables	73.1	73.6	76.2	73.4	71.4
Implants	8.5	8.0	15.1	9.6	9.3
Male condom	78.6	75.2	81.5	80.9	86.8
Female condom	23.0	18.8	38.9	22.0	35.7
Diaphragm	10.9	8.1	19.4	10.0	19.6
Foam/jelly	6.1	5.3	14.5	6.5	7.8
Emergency contraception	10.4	9.6	19.4	11.8	11.4
Any traditional method	56.4	59.0	66.0	61.1	45.8
Lactational amenorrhea method (LAM)	45.4	50.1	43.5	50.3	28.8
Periodic abstinence	35.5	35.5	56.8	39.0	32.8
Withdrawal	13.7	13.2	23.6	16.2	13.3
Folk method	1.0	0.8	0.0	1.5	1.2
Mean number of methods known	4.4	4.3	5.7	4.7	4.5
Number of women	8,754	5,733	56	1,038	1,939

[1]Had sexual intercourse in the month preceding the survey
[2]Did *not* have sexual intercourse in the month preceding the survey

Figure 5.1
Trends in Knowledge of Family Planning Methods Among Currently Married Women, 1995 EDHS and 2002 EDHS



Knowledge of the Fertile Period

An elementary understanding of reproductive physiology, particularly knowledge of the period in the ovulatory cycle when pregnancy is most likely, is critical for the practice of periodic abstinence. To investigate women's knowledge about the fertile period, respondents were asked whether there are certain days between the two menstrual periods when a woman is more likely to become pregnant if she has sexual intercourse. Those who answered affirmatively to the question were asked whether this time is just before the period begins, during the period, right after the period ends, or halfway between the two periods.

Table 5.2 shows that only one in nine respondents knows that a woman has the highest probability of becoming pregnant if she has sexual intercourse halfway between two periods. Thirty-seven percent of respondents either were unable to say when a woman is most at risk of pregnancy or believed that the risk of pregnancy does not vary. Even among those who know of periodic abstinence as a family planning method and among those who are current

Table 5.2 Knowledge of fertile period

Percent distribution of women by knowledge of the fertile period during the ovulatory cycle, according to knowledge of periodic abstinence and current use/nonuse of periodic abstinence, Eritrea 2002

Perceived fertile period	Knows of periodic abstinence	User of periodic abstinence	Nonuser of periodic abstinence	All women
Just before her period begins	5.2	(4.3)	4.0	4.0
During her period	2.0	(0.0)	2.0	2.0
Right after her period has ended	56.9	(63.6)	45.1	45.2
Halfway between two periods	17.7	(32.1)	11.1	11.2
Other	0.0	(0.0)	0.1	0.1
No specific time	10.7	(0.0)	19.5	19.4
Don't know	7.4	(0.0)	17.9	17.8
Missing	0.2	(0.0)	0.2	0.2
Total	100.0	100.0	100.0	100.0
Number of women	3,106	41	8,713	8,754

Note: Figures in parentheses are based on 25-49 unweighted cases.

users of the method, understanding of the ovulatory cycle is limited; 18 percent and 32 percent, respectively, of these women had correct knowledge of the fertile period in the ovulatory cycle.

Differentials in Knowledge of Contraceptive Methods and Knowledge of Sources of Contraceptive Methods

Differentials in knowledge of contraceptive methods by residence and education show that only eight in ten rural women and uneducated women know any modern method, whereas knowledge of a modern method is almost universal among urban women and educated women (Table 5.3). Women in

Table 5.3 Knowledge of contraceptive methods by background characteristics

Percentage of currently married women who know at least one contraceptive method, who know at least one modern method, and who know a source for obtaining a method, by background characteristics, Eritrea 2002

Background characteristic	Knows any method	Mean number of methods known	Knows any modern method[1]	Mean number of modern methods known	Knows source for methods	Number of women
Age						
15-19	87.0	3.8	85.9	3.1	33.4	580
20-24	87.7	4.3	85.2	3.3	41.4	950
25-29	88.4	4.6	86.8	3.5	48.1	1,212
30-34	87.8	4.3	84.1	3.3	43.5	904
35-39	88.2	4.5	85.9	3.4	45.8	899
40-44	85.6	4.1	82.2	3.1	39.6	663
45-49	86.0	3.9	83.1	3.0	39.0	526
Residence						
Total urban	97.7	6.2	97.2	4.7	70.8	1,967
Asmara	99.2	7.0	98.6	5.2	78.7	868
Other towns	96.5	5.7	96.1	4.3	64.5	1,099
Rural	82.2	3.3	78.7	2.6	27.9	3,766
Zoba						
Debubawi Keih Bahri	77.8	4.0	72.8	3.0	43.1	210
Maekel	98.6	6.5	97.6	4.9	70.9	1,103
Semenawi Keih Bahri	86.9	3.6	84.7	2.8	34.6	817
Anseba	82.5	3.5	79.7	2.7	32.3	784
Gash-Barka	69.6	2.7	64.1	2.1	24.8	1,142
Debub	96.2	4.7	95.1	3.6	44.8	1,677
Education						
No education	80.6	3.1	76.8	2.4	26.4	3,549
Primary	97.7	5.3	97.3	4.0	57.6	1,075
Middle	99.2	6.1	98.8	4.7	65.3	400
Secondary +	99.7	7.8	99.5	5.8	88.2	709
Wealth index						
Lowest	74.3	2.5	69.5	2.0	17.5	1,161
Second	79.2	3.1	75.6	2.4	26.6	1,215
Middle	89.1	3.7	86.7	2.9	33.8	1,224
Fourth	97.7	5.6	96.9	4.2	60.4	1,079
Highest	99.3	7.0	98.8	5.3	80.9	1,053
Total	87.5	4.3	85.0	3.3	42.6	5,733

[1]Female sterilization, male sterilization, pill, IUD, injectables, implants, male condom, female condom, diaphragm, foam or jelly, and emergency contraception

zobas Debubawi Keih Bahri and Gash-Barka are less likely to know of family planning methods than women in other zobas. Knowledge of family planning methods is positively related to wealth. The mean number of modern methods known varies from 2.0 for women in the lowest quintile of the wealth index to 5.3 methods for women in the highest quintile.

In the 2002 EDHS, users of modern methods were asked the source of their method and non-users of modern methods were asked if they knew where they could obtain a method of family planning. Table 5.3 shows that 43 percent of currently married women know a place where they can get a contraceptive method. For background characteristics, knowledge of a source of family planning methods is related to knowledge of any method.

5.2 EXPOSURE TO FAMILY PLANNING INFORMATION

Radio and television are the major sources of information about family planning in the electronic media. Print media, that is newspapers or magazines, posters, and leaflets or brochures, can also provide family planning information. Assessment of the level of public exposure to various media allows program managers and planners to effectively target population subgroups for information, education, and communication campaigns.

The 2002 EDHS respondents were asked whether in the last 12 months they had heard about family planning on the radio or television or read about family planning in a newspaper or magazine, a poster, or leaflets or brochures. Table 5.4 shows that half of women have heard a family planning message on the radio, the major medium used by all subgroups. Women's exposure to all other media is much lower. Nineteen percent of women reported having seen a family planning message on television, and the same proportion saw a family planning message on a poster. Only 16 percent saw a family planning message in newspapers or magazines. Forty-five percent of women were not exposed to family planning messages in any of these media. Exposure to family planning messages in all five media has increased since the 1995 EDHS (see the last two rows of the table).

Rural women are less likely than urban women to have been exposed to family planning messages in the media. However, since 1995 there has been a sharp increase in exposure to messages on radio among rural women—from 22 percent to 37 percent—while there has been no change in exposure among women in Asmara and other urban areas (Figure 5.2). Although the proportion of Eritrean women who have seen a family planning message on television increased from 11 percent to 19 percent between the two surveys, only 4 percent of rural women—the same proportion who watch television weekly—have been exposed to family planning messages on television. The limited exposure of rural women to television messages is understandable because less than 1 percent of rural households own a television. Exposure to print media is still low in Eritrea but has increased substantially since 1995 because of the progress made in female education (see Chapter 3). Exposure to each medium decreases with age, most notably for print media. Level of education is closely correlated with exposure to family planning messages in both the print media and the two electronic media. For example, 33 percent of uneducated women compared with 77 percent of women with at least secondary education have heard a family planning message on the radio.

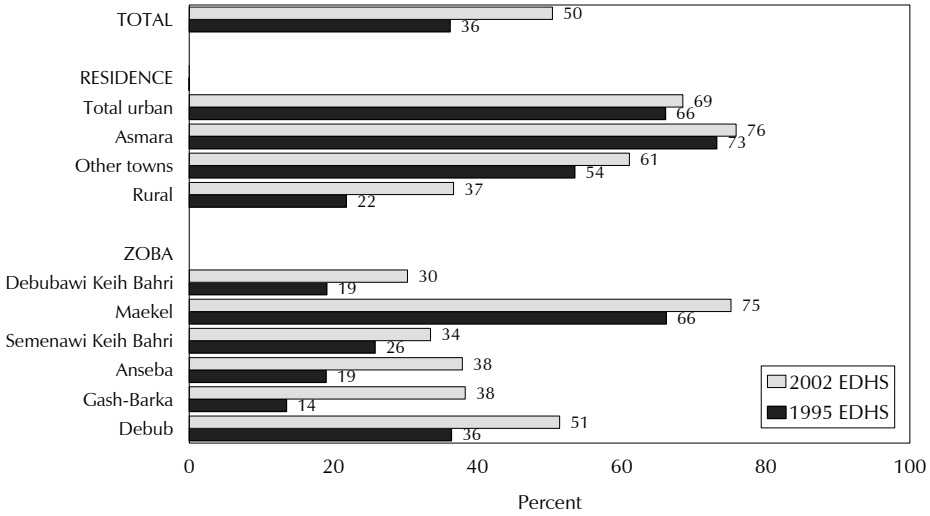
Table 5.4 Exposure to family planning messages

Percentage of women who have heard or seen a family planning message on the radio or television, or in a newspaper/magazine, or on posters or leaflets/brochures in the past 12 months, according to background characteristics, Eritrea 2002

Background characteristic	Exposed to family planning messages on:					None of these five media sources	Number of women
	Radio	Tele-vision	Newspaper/ magazine	Poster	Leaflets/ brochures		
Age							
15-19	54.0	21.2	22.2	24.6	19.0	39.0	2,001
20-24	53.0	20.0	19.9	22.5	16.5	42.2	1,454
25-29	52.9	20.8	15.3	18.9	13.8	43.5	1,543
30-34	47.6	16.4	12.3	16.1	10.4	49.5	1,109
35-39	50.8	18.1	12.1	14.7	8.9	46.4	1,085
40-44	44.2	17.3	10.0	14.1	8.9	53.6	827
45-49	41.1	13.8	5.6	9.5	4.3	56.2	734
Residence							
Total urban	68.5	39.4	29.8	32.4	26.0	24.8	3,767
Asmara	75.9	55.5	40.2	39.0	33.7	16.3	1,899
Other towns	61.1	23.1	19.3	25.6	18.1	33.4	1,868
Rural	36.7	3.5	4.8	8.3	3.5	60.9	4,987
Zoba							
Debubawi Keih Bahri	30.3	14.3	10.6	17.5	10.6	63.4	324
Maekel	75.2	49.5	36.1	36.5	30.3	17.4	2,264
Semenawi Keih Bahri	33.5	7.9	6.7	10.6	5.9	63.1	1,148
Anseba	37.9	10.0	9.0	11.6	7.0	58.9	1,130
Gash-Barka	38.3	3.4	5.1	8.7	3.9	59.4	1,500
Debub	51.4	9.9	10.7	15.5	9.5	45.7	2,388
Education							
No education	32.8	4.1	1.1	4.2	0.7	65.6	4,384
Primary	60.3	19.5	13.2	18.9	10.4	35.8	1,637
Middle	65.9	29.2	28.9	31.0	24.3	28.0	974
Secondary +	76.6	49.7	46.4	47.8	40.5	13.7	1,760
Total 2002	**50.4**	**18.9**	**15.6**	**18.7**	**13.2**	**45.4**	**8,754**
Total 1995	36.2	10.5	10.7	10.5	6.6	u	5,054

u = Unknown (not available)

Figure 5.2
Exposure to Family Planning Messages on Radio, Women Age 15-49, 1995 EDHS and 2002 EDHS



Note: Data for 1995 refer to the few months preceding the survey; data for 2002 refer to the 12 months preceding the survey.

Among zobas, women in zoba Maekel have the highest level of exposure to all five media, with fewer than two in ten women with no exposure to media. Exposure to all types of media is much lower in the other five zobas. Slightly less than half of women in zoba Debub (46 percent) and around six in ten women in other zobas have no exposure to family planning messages through any electronic or print media. Although zoba Debubawi Keih Bahri has the lowest overall exposure to media, women in the zoba have greater exposure to family planning messages on television and in the print media than women in any other zoba except zoba Maekel.

5.3 ACCEPTABILITY OF USE OF ELECTRONIC MEDIA TO DISSEMINATE FAMILY PLANNING MESSAGES

To determine the level of acceptance of the dissemination of family planning information through the media, respondents were asked in the 2002 EDHS whether it was acceptable to disseminate family planning information on radio and television. It should be pointed out that the acceptability of dissemination on radio in Eritrea is much more important because the exposure to television is very limited in rural areas where the vast majority of women live (see Table 3.8).

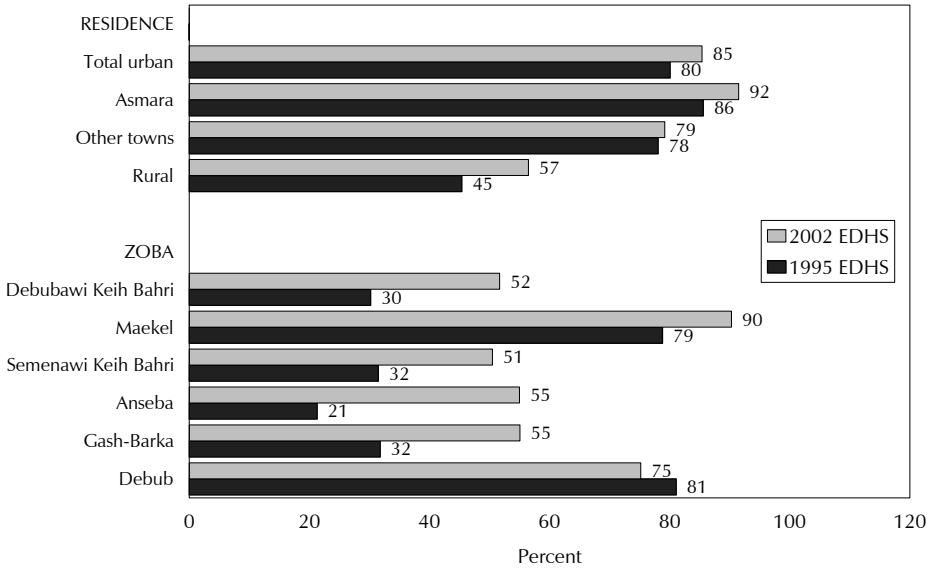
Overall, 69 percent of women in the 2002 EDHS reported that it was acceptable to use radio to air family planning messages, up from 57 percent in 1995 (Table 5.5 and Figure 5.3). Although differentials by background characteristics persist, the majority of women in each subgroup now consider it acceptable to have messages about family planning on radio.

Table 5.5 Acceptability of media messages on family planning

Percent distribution of women by acceptability of messages about family planning on radio and television, according to background characteristics, Eritrea 2002

Background characteristic	Family planning messages on radio				Family planning messages on television				Number of women
	Accept-able	Not accept-able	Don't know/ Missing	Total	Accept-able	Not accept-able	Don't know/ Missing	Total	
Age									
15-19	77.7	13.7	8.7	100.0	65.2	13.3	21.5	100.0	2,001
20-24	72.4	17.8	9.8	100.0	60.8	16.7	22.5	100.0	1,454
25-29	71.9	18.9	9.2	100.0	59.9	17.5	22.6	100.0	1,543
30-34	64.5	22.3	13.2	100.0	51.5	21.1	27.5	100.0	1,109
35-39	66.3	20.7	13.0	100.0	56.4	19.1	24.5	100.0	1,085
40-44	57.0	29.3	13.8	100.0	46.2	26.3	27.5	100.0	827
45-49	55.9	28.4	15.7	100.0	44.0	24.5	31.5	100.0	734
Residence									
Total urban	85.4	11.5	3.1	100.0	81.1	11.5	7.4	100.0	3,767
Asmara	91.5	7.7	0.8	100.0	90.0	8.6	1.5	100.0	1,899
Other towns	79.2	15.3	5.5	100.0	72.0	14.6	13.4	100.0	1,868
Rural	56.5	26.3	17.1	100.0	39.0	23.7	37.2	100.0	4,987
Zoba									
Debubawi Keih Bahri	51.7	23.1	25.2	100.0	49.3	23.2	27.5	100.0	324
Maekel	90.3	8.8	0.9	100.0	87.5	9.7	2.8	100.0	2,264
Semenawi Keih Bahri	50.5	31.4	18.1	100.0	33.0	23.7	43.3	100.0	1,148
Anseba	55.0	24.3	20.7	100.0	40.6	23.5	36.0	100.0	1,130
Gash-Barka	55.1	28.7	16.2	100.0	39.8	27.8	32.4	100.0	1,500
Debub	75.2	16.9	7.8	100.0	59.7	15.4	24.9	100.0	2,388
Education									
No education	50.7	29.7	19.7	100.0	34.3	26.9	38.8	100.0	4,384
Primary	79.2	15.9	4.9	100.0	66.8	14.9	18.3	100.0	1,637
Middle	88.1	9.5	2.4	100.0	79.0	10.4	10.6	100.0	974
Secondary +	94.4	5.2	0.4	100.0	92.8	5.4	1.8	100.0	1,760
Total 2002	**68.9**	**19.9**	**11.1**	**100.0**	**57.1**	**18.5**	**24.4**	**100.0**	**8,754**
Total 1995	56.7	18.0	25.4	100.0	52.2	17.7	30.1	100.0	5,054

Figure 5.3
Trends in Acceptability of Family Planning Messages on Radio, Women Age 15-49 Years, 1995 EDHS and 2002 EDHS



For each subgroup in Table 5.5, the proportion of women who report that it is acceptable to broadcast family planning messages on radio is about the same as the proportion who have exposure to radio (see Table 3.8). Acceptability declines with age, increases with education, is lower in rural areas than in urban areas, and higher in zobas Maekel and Debub than in other zobas.

Overall, 57 percent of women in Eritrea consider the dissemination of family planning messages on television acceptable, up from 52 percent in 1995. The differentials by background characteristics in acceptability of television messages on family planning show the same pattern as the differentials in acceptability of messages on radio. For all subgroups, the level of acceptability of messages on television is higher than the level of exposure to television, indicating a general approval of message dissemination through the electronic media. However, in certain subgroups, less than half of women are supportive of having family planning messages on television: women age 40-49 (44-46 percent), rural women (39 percent), uneducated women (34 percent), and women in all zobas except Maekel and Debub. In these subgroups that show a lower support for dissemination of family planning messages, approximately one-fourth of women consider it unacceptable.

5.4 INTERPERSONAL COMMUNICATION ABOUT FAMILY PLANNING

Talking about family planning, particularly with a spouse, is not a necessary precondition for adoption of family planning. However, for many women such communication is an important intermediate step. For users of family planning, interpersonal communication may also affect sustained use of contraception, especially for users who experience problems with their method.

Discussion of Family Planning with Husband

An indication of the acceptability of family planning is the extent to which spouses discuss the topic of family planning with each other. Table 5.6 indicates that in the past 12 months, among currently married women who know a method of family planning, 27 percent have discussed family planning with

Table 5.6 Discussion of family planning with husband

Percent distribution of currently married women who know a contraceptive method by the number of times they discussed family planning with their husbands in the past year, according to current age, Eritrea 2002

Age	Number of times family planning was discussed with husband				Total	Number of women
	Never	Once or two	Three or more	Missing		
15-19	74.9	16.3	8.6	0.3	100.0	504
20-24	71.0	16.9	12.0	0.1	100.0	833
25-29	71.5	18.5	9.8	0.2	100.0	1,072
30-34	72.9	14.7	12.4	0.0	100.0	793
35-39	69.4	15.7	14.9	0.0	100.0	793
40-44	75.4	11.8	12.8	0.0	100.0	568
45-49	81.4	8.7	9.6	0.3	100.0	453
Total	73.0	15.3	11.6	0.1	100.0	5,016

their husbands at least once and 12 percent have discussed it more often. Women age 20-39 are more likely to discuss family planning with their spouses than women who are younger or older.

Discussion of Family Planning with Persons Other than Husband

Women were asked in the 2002 EDHS whether they had discussed family planning with relatives, friends, or neighbors (i.e., someone other than the husband) in the past 12 months. The results in Table 5.7 suggest that only one in four currently married Eritrean women discussed family planning with friends or neighbors, 3 percent discussed it with their sisters, and 2 percent discussed it with their mother. Discussion of family planning with other relatives was rare. There are almost no differences by age in the percentage of women who discussed family planning with someone other than their husband. However, in certain subgroups, lower proportions of women discussed family planning with someone other than their husband: rural women (17 percent) and uneducated women (13 percent). Among women whose husbands are uneducated and women who are in the lowest quintile of the wealth index, discussions of family planning with the husband were slightly less common.

5.5 ATTITUDES OF COUPLES TOWARD FAMILY PLANNING

Besides knowledge of methods, a positive attitude toward family planning is a prerequisite to adoption of family planning. Attitudinal data were collected by asking respondents whether they approved of a couple using family planning and, if they were currently married, what they thought was their husband's opinion on the subject. The results presented in Table 5.8 are confined to currently married women and exclude women who do not know any contraceptive method. Overall, 58 percent of married women approve of family planning, 37 percent disapprove, and 5 percent neither approve nor disapprove. Since 1995, women's approval of family planning has declined from 67 percent to 58 percent (Figure 5.4). Although the proportion of currently married women who discuss family planning with their husbands has remained largely unchanged since the 1995 EDHS survey, the proportion of women reporting that they do not know their husband's attitude has declined substantially. Two in ten women in 2002, compared with four in ten women in the earlier survey, reported that they did not know their husband's attitude toward family planning. Approval of family planning by *both* wife and husband has increased slightly, from 3l to 35 percent. However, disapproval of family planning by *both* husband and wife has increased substantially, from 10 percent to 25 percent. It is not clear how an increase in the

proportion of women who could report their husband's attitude toward family planning has affected their own attitude toward family planning.

Table 5.7 Discussion of family planning with persons other than husband

Percentage of currently married women knowing at least one contraceptive method who discussed family planning with various persons other than their husband in the past 12 months, by background characteristics, Eritrea 2002

Background characteristic	Mother	Father	Sister	Brother	Daughter	Son	Mother in-law	Father in-law	Friends/ neigh-bors	Other	Any person	Number of women
Age												
15-24	3.9	0.4	2.8	0.6	0.0	0.0	0.6	0.2	22.1	0.0	23.3	1,337
25-34	1.7	0.1	3.4	0.4	0.0	0.0	0.2	0.2	23.6	0.3	25.2	1,865
35-49	0.8	0.2	2.5	0.7	1.4	0.5	0.2	0.0	21.7	0.3	22.1	1,813
Residence												
Total urban	2.7	0.1	4.9	0.9	0.8	0.4	0.3	0.1	33.0	0.4	34.5	1,921
Asmara	3.7	0.1	8.8	1.7	1.3	0.8	0.3	0.0	40.8	0.3	43.0	861
Other towns	1.9	0.2	1.7	0.3	0.5	0.0	0.2	0.3	26.7	0.4	27.6	1,060
Rural	1.5	0.2	1.7	0.4	0.3	0.0	0.3	0.1	16.0	0.1	16.8	3,094
Education												
No education	0.9	0.1	1.1	0.2	0.5	0.1	0.3	0.1	12.4	0.2	12.9	2,861
Primary	1.9	0.0	3.9	0.4	1.0	0.3	0.1	0.3	29.0	0.0	30.5	1,051
Middle	3.2	0.9	4.6	1.3	0.3	0.3	0.6	0.0	35.8	0.4	36.9	397
Secondary +	5.8	0.4	7.9	2.0	0.0	0.1	0.5	0.1	46.5	0.4	48.8	707
Husband's education												
No education	0.8	0.2	1.0	0.1	0.3	0.1	0.2	0.1	11.2	0.1	11.7	2,171
Primary	2.7	0.0	3.1	0.2	1.0	0.3	0.6	0.1	24.7	0.1	26.0	1,172
Middle	1.4	0.5	3.7	0.9	0.2	0.2	0.4	0.6	29.5	0.4	31.1	509
Secondary +	3.6	0.2	6.3	1.8	0.5	0.2	0.1	0.1	38.6	0.3	40.4	1,121
Wealth index												
Lowest	1.4	0.2	1.3	0.2	0.4	0.2	0.1	0.0	10.2	0.2	10.7	862
Second	1.8	0.0	1.5	0.4	0.2	0.0	0.5	0.0	13.5	0.2	14.3	963
Middle	1.3	0.3	1.5	0.2	0.4	0.0	0.3	0.3	17.4	0.0	17.9	1,090
Fourth	1.6	0.2	3.2	0.7	0.3	0.0	0.3	0.2	29.8	0.0	30.8	1,054
Highest	3.5	0.3	6.8	1.3	1.2	0.7	0.3	0.1	39.0	0.7	41.3	1,046
Total	2.0	0.2	2.9	0.6	0.5	0.2	0.3	0.1	22.5	0.2	23.6	5,016

Note: Total includes 43 women who did not know husband's education; they are not shown separately.

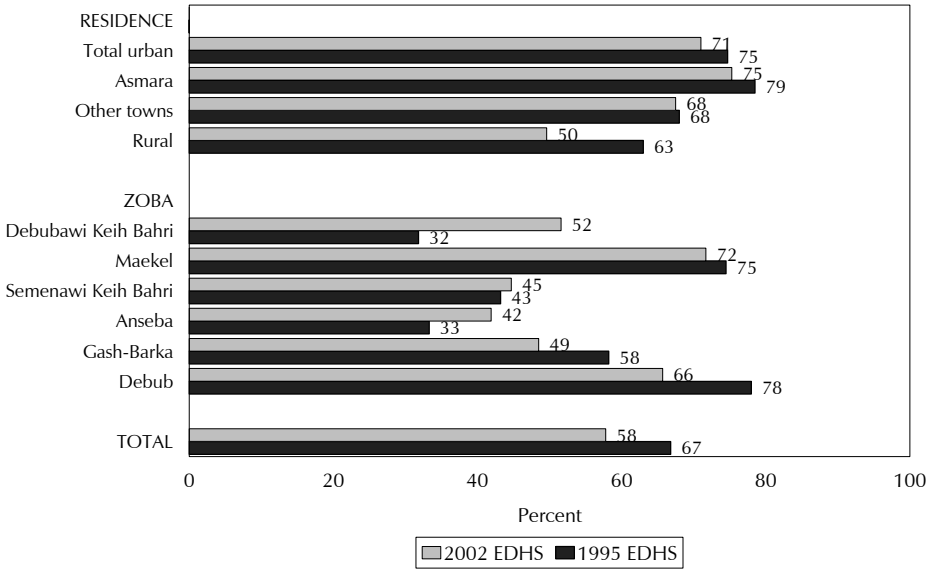
Table 5.8 Attitudes toward family planning

Percent distribution of currently married women who know of a method of family planning, by approval of family planning and their perception of their husband's attitude toward family planning, according to background characteristics, Eritrea 2002

Background characteristic	Respondent approves of family planning			Respondent disapproves of family planning							
	Husband approves	Husband disapproves	Husband's attitude unknown	Husband approves	Husband disapproves	Husband's attitude unknown	Woman is unsure[1]	Total	Wife approves	Husband approves[1]	Number of women
Age											
15-19	39.8	8.3	12.7	2.9	22.1	9.1	5.2	100.0	60.7	43.5	504
20-24	36.2	11.6	12.2	4.6	22.5	8.1	4.8	100.0	60.0	41.2	833
25-29	39.3	12.9	10.7	3.1	21.7	7.6	4.6	100.0	62.9	43.2	1,072
30-34	33.4	12.6	12.1	3.7	25.5	8.1	4.5	100.0	58.1	37.7	793
35-39	34.9	14.0	9.7	4.3	24.0	7.7	5.4	100.0	58.6	39.7	793
40-44	29.2	9.0	7.6	6.0	32.0	9.6	6.6	100.0	45.8	35.5	568
45-49	27.0	13.1	11.2	2.9	29.8	8.9	7.0	100.0	51.3	30.6	453
Residence											
Total urban	49.2	13.8	8.0	5.6	16.3	4.4	2.7	100.0	71.0	55.5	1,921
Asmara	59.4	12.3	3.6	8.5	12.1	1.9	2.1	100.0	75.3	69.1	861
Other towns	40.9	14.9	11.6	3.2	19.7	6.4	3.3	100.0	67.5	44.5	1,060
Rural	26.1	10.8	12.7	2.9	30.0	10.7	6.8	100.0	49.6	29.5	3,094
Zoba											
Debubawi Keih Bahri	34.4	9.1	8.1	2.0	19.7	15.6	11.2	100.0	51.6	36.9	163
Maekel	55.2	12.2	4.3	8.2	16.0	1.8	2.3	100.0	71.7	64.3	1,087
Semenawi Keih Bahri	16.6	10.6	17.5	1.8	31.1	13.5	8.9	100.0	44.7	18.7	710
Anseba	21.6	9.9	10.4	1.6	40.6	10.8	5.1	100.0	41.9	23.8	647
Gash-Barka	20.9	15.5	12.1	2.6	34.5	9.7	4.7	100.0	48.5	23.7	794
Debub	41.8	11.6	12.4	3.8	17.3	7.8	5.4	100.0	65.7	46.2	1,614
Education											
No education	20.9	11.4	13.5	3.2	31.6	11.9	7.5	100.0	45.8	24.6	2,861
Primary	44.7	13.8	10.7	3.9	18.5	5.4	2.9	100.0	69.2	49.3	1,051
Middle	54.0	10.2	7.3	6.3	17.6	2.6	2.0	100.0	71.5	60.8	397
Secondary +	66.7	12.1	3.0	5.7	10.3	0.8	1.5	100.0	81.8	72.9	707
Wealth Index											
Lowest	17.9	9.1	13.5	1.5	35.8	12.6	9.6	100.0	40.5	19.6	862
Second	23.6	10.8	14.4	2.8	29.9	10.9	7.6	100.0	48.8	27.1	963
Middle	26.8	12.1	12.2	2.9	29.9	10.0	6.1	100.0	51.1	30.3	1,090
Fourth	45.1	14.1	10.5	5.2	17.8	5.3	2.0	100.0	69.7	50.8	1,054
Highest	57.7	12.8	4.7	6.8	12.6	3.4	1.9	100.0	75.2	65.3	1,046
Total 2002	**35.0**	**11.9**	**10.9**	**3.9**	**24.7**	**8.3**	**5.3**	**100.0**	**57.8**	**39.5**	**5,016**
Total 1995[2]	31.2	5.7	29.8	1.4	9.7	10.7	11.5	100.0	66.8	33.4	2,145

[1] Includes women who are unsure about their own attitude, but know their husbands' attitude
[2] Currently married non-sterilized women

Figure 5.4
Trends in Approval of Family Planning, Women Age 15-49, 1995 EDHS and 2002 EDHS



5.6 EVER USE OF CONTRACEPTIVE METHODS

All women interviewed in the survey who said they had heard of a method of family planning were asked if they had ever used that method. Table 5.9 shows the percentage of all women and currently married women who have ever used a family planning method by specific method and age. The table also shows ever use of methods among sexually active unmarried women. Seventeen percent of all women and 22 percent of currently married women reported having used a method at some time. Ever use of family planning methods has increased by almost 50 percent in both groups; ever-use rates in 1995 were 12 percent and 15 percent for all women and currently married women, respectively. Fifteen percent of currently married women have used a modern method of family planning at some time. Among these women, pills and injectables are the most commonly used modern methods (10 percent and 7 percent, respectively); 3 percent have used condoms. There has been an increase in the use of these three methods since 1995, especially for injectables (from 1 percent to 7 percent).

Thirteen percent of currently married women have used a traditional method at some time; 9 percent have used LAM, 6 percent have used periodic abstinence, and 2 percent have used withdrawal. Ever use of any method among the youngest cohort is 8 percent; it is 19 percent among women 20-24, and 28 percent among women in age groups 25-29 and 35-39.

For sexually active unmarried women, ever use of contraceptive methods was 47 percent for any method, 41 percent for modern methods, and 12 percent for traditional methods. The most commonly used methods among these women were the male condom (23 percent), the pill (18 percent), and injectables (11 percent).

Table 5.9 Ever use of contraception

Percentage of all women, of currently married women, and of sexually active unmarried women, who have ever used any contraceptive method, by specific method, according to age, Eritrea 2002

		Modern method												Traditional method					
Age	Any method	Any modern method	Female sterilization	Male sterilization	Pill	IUD	Injectables	Implants	Male condom	Female condom	Diaphragm	Foam/ jelly	Emergency contraception	Any traditional method	LAM	Periodic abstinence	Withdrawal	Folk method	Number of women
ALL WOMEN																			
15-19	3.5	2.4	0.0	0.0	0.9	0.0	0.7	0.0	0.8	0.0	0.0	0.0	0.2	1.9	0.8	1.1	0.3	0.0	2,001
20-24	14.5	8.7	0.0	0.1	4.6	0.1	3.1	0.0	2.8	0.0	0.0	0.0	0.3	8.5	6.0	4.0	1.2	0.2	1,454
25-29	24.8	16.6	0.0	0.0	9.5	0.6	7.8	0.2	4.6	0.2	0.0	0.1	0.5	13.7	10.1	6.6	2.1	0.0	1,543
30-34	22.5	15.9	0.2	0.0	11.5	1.6	5.7	0.0	3.0	0.0	0.0	0.0	0.2	12.8	8.7	6.1	1.4	0.0	1,109
35-39	27.9	21.4	0.4	0.0	12.9	2.8	10.6	0.0	3.8	0.3	0.2	0.2	0.9	15.0	10.3	7.1	1.5	0.1	1,085
40-44	20.4	15.2	0.4	0.0	11.6	3.7	6.0	0.1	2.2	0.0	0.0	0.3	0.5	11.1	8.4	5.6	1.6	0.0	827
45-49	17.9	11.0	0.3	0.0	7.1	2.4	5.2	0.0	0.9	0.0	0.0	0.0	0.0	10.4	8.9	4.6	0.7	0.2	734
Total	17.3	11.9	0.1	0.0	7.4	1.2	5.1	0.0	2.6	0.1	0.0	0.1	0.4	9.7	6.9	4.6	1.2	0.1	8,754
CURRENTLY MARRIED WOMEN																			
15-19	8.2	5.0	0.0	0.0	2.8	0.0	1.6	0.0	0.5	0.0	0.0	0.0	0.2	5.1	2.1	2.5	0.9	0.1	580
20-24	19.0	10.9	0.0	0.2	6.3	0.1	4.3	0.0	2.5	0.0	0.0	0.0	0.4	11.9	8.8	5.1	1.6	0.2	950
25-29	28.0	18.4	0.0	0.0	10.8	0.8	9.1	0.2	4.6	0.1	0.0	0.1	0.6	16.3	12.3	7.6	2.4	0.0	1,212
30-34	23.6	16.4	0.2	0.0	11.5	1.6	6.3	0.0	2.6	0.0	0.0	0.0	0.1	13.3	8.8	6.9	1.3	0.0	904
35-39	28.3	21.3	0.1	0.0	12.3	3.4	11.1	0.0	3.4	0.4	0.2	0.3	0.7	14.9	10.6	6.9	1.4	0.1	899
40-44	20.4	15.4	0.5	0.0	11.7	4.0	6.5	0.0	1.7	0.0	0.0	0.3	0.6	11.3	7.8	5.9	1.6	0.0	663
45-49	20.3	13.3	0.4	0.0	8.5	3.0	6.5	0.0	1.0	0.0	0.0	0.1	0.0	11.2	9.5	5.4	1.0	0.0	526
Total	22.3	15.1	0.2	0.0	9.5	1.7	6.9	0.0	2.7	0.1	0.0	0.1	0.4	12.7	9.1	6.0	1.6	0.1	5,733
SEXUALLY ACTIVE UNMARRIED WOMEN[1]																			
Total	47.1	40.5	2.3	0.0	17.8	4.1	10.8	0.0	22.9	0.4	0.0	0.0	0.0	11.7	8.6	7.3	0.0	0.0	56

LAM= Lactational amenorrhea method
[1]Women who had sexual intercourse in the month preceding the survey

5.7 CURRENT USE OF CONTRACEPTIVE METHODS

Information on current use of family planning is among the most important data collected in the 2002 EDHS. It provides insight into one of the principal determinants of fertility and serves as a key measure for assessing the success of national family planning efforts. This section focuses on data from the 2002 EDHS on levels, differentials, and trends in current use of contraception.

Levels of Family Planning Use

In the 2002 EDHS women were asked, "Are you currently doing something or using any method to delay or avoid getting pregnant?" Table 5.10 shows the percent distribution of women currently using a contraceptive method by age.

Eight percent of currently married women in Eritrea reported using contraception at the time of the survey: 5 percent modern methods and 3 percent traditional methods. Only three methods are being used by at least 1 percent of currently married women: injectables (3 percent) and the pill (1 percent)

Table 5.10 Current use of contraception

Percent distribution of all women, of currently married women, and of sexually active unmarried women by contraceptive method currently used, according to age, Eritrea 2002

		Modern method								Traditional method						
Age	Using any method	Any modern method	Female sterilization	Pill	IUD	Injectables	Male condom	Female condom	Foam/jelly	Any traditional method	LAM	Periodic abstinence	Withdrawal	Not currently using	Total	Number of women
ALL WOMEN																
15-19	1.2	0.9	0.0	0.1	0.0	0.3	0.4	0.0	0.0	0.3	0.1	0.1	0.1	98.8	100.0	2,001
20-24	4.2	2.4	0.0	0.8	0.0	1.1	0.4	0.0	0.0	1.8	1.3	0.4	0.0	95.8	100.0	1,454
25-29	8.3	5.6	0.0	1.5	0.2	2.6	1.2	0.0	0.0	2.7	2.3	0.3	0.0	91.7	100.0	1,543
30-34	8.0	4.9	0.2	1.5	0.8	1.9	0.5	0.0	0.0	3.1	2.7	0.4	0.0	92.0	100.0	1,109
35-39	9.4	6.9	0.4	1.4	0.4	4.0	0.6	0.0	0.0	2.5	1.6	0.9	0.0	90.6	100.0	1,085
40-44	7.8	5.0	0.4	1.2	0.4	2.0	0.7	0.0	0.3	2.8	1.6	0.8	0.4	92.2	100.0	827
45-49	5.0	3.3	0.3	0.7	0.2	2.1	0.0	0.0	0.0	1.7	0.8	0.9	0.0	95.0	100.0	734
Total	5.8	3.8	0.1	1.0	0.3	1.8	0.6	0.0	0.0	1.9	1.4	0.5	0.1	94.2	100.0	8,754
CURRENTLY MARRIED WOMEN																
15-19	2.4	1.4	0.0	0.4	0.0	0.8	0.2	0.0	0.0	0.9	0.2	0.5	0.2	97.6	100.0	580
20-24	5.9	3.1	0.0	1.2	0.0	1.6	0.3	0.0	0.0	2.8	2.1	0.6	0.0	94.1	100.0	950
25-29	10.0	6.6	0.0	1.9	0.3	3.1	1.3	0.0	0.0	3.4	2.9	0.4	0.0	90.0	100.0	1,212
30-34	9.0	5.3	0.2	1.8	0.8	1.9	0.6	0.0	0.0	3.7	3.3	0.4	0.0	91.0	100.0	904
35-39	10.1	7.3	0.1	1.7	0.5	4.4	0.6	0.0	0.0	2.8	1.8	1.0	0.0	89.9	100.0	899
40-44	9.3	5.8	0.5	1.4	0.5	2.5	0.6	0.0	0.3	3.5	2.0	1.0	0.5	90.7	100.0	663
45-49	6.9	4.6	0.4	0.9	0.2	3.0	0.0	0.0	0.0	2.4	1.1	1.2	0.0	93.1	100.0	526
Total	8.0	5.1	0.2	1.4	0.4	2.6	0.6	0.0	0.0	2.9	2.1	0.7	0.1	92.0	100.0	5,733
SEXUALLY ACTIVE UNMARRIED WOMEN[1]																
Total	26.6	26.3	2.3	2.6	0.0	8.8	12.2	0.4	0.0	0.4	0.0	0.4	0.0	73.4	100.0	56

Note: If more than one method is used, the most effective method is tabulated here.
LAM= Lactational amenorrhea method
[1] Women who had sexual intercourse in the month preceding the survey

among modern methods, and LAM (2 percent)[2] among traditional methods.

Current use is clearly associated with a woman's age; younger and older women are less likely to be using contraception than women age 25-44. Current use rises from 2 percent among the youngest age group (15-19) of married women to 6 percent among women age 20-24 and to 9 or 10 percent until age 44, and then falls to 7 percent among the oldest age group (45-49).

Trends in Contraceptive Use

Contraceptive use remains low in Eritrea; there has been no increase since the previous survey. Although the prevalence rate has remained the same, it is encouraging that among contracepting women, use of modern methods has increased. The higher use of modern methods and lower use of traditional methods has occurred in all subgroups shown in Table 5.11. Considering that the total prevalence rate has

[2] This is the percentage of women who said that they were using LAM; however, the percentage of women who had given birth in the eight months preceding the survey, were breastfeeding, and who were amenorrheic is less than 1 percent. For this reason, LAM is considered a traditional method in this context.

Table 5.11 Current use of contraception by background characteristics

Percent distribution of currently married women by contraceptive method currently used, according to background characteristics, Eritrea 2002

Background characteristic	Using any method	Modern method: Any modern method	Female sterilization	Pill	IUD	Injectables	Male condom	Foam/jelly	Traditional method: Any traditional method	LAM	Periodic abstinence	Withdrawal	Not currently using	Total	Number of women
Residence															
Total urban	16.5	12.3	0.4	3.3	1.0	5.8	1.6	0.1	4.3	2.8	1.3	0.1	83.5	100.0	1,967
Asmara	23.2	17.6	0.5	5.1	2.1	7.3	2.4	0.2	5.7	3.3	2.1	0.3	76.8	100.0	868
Other towns	11.2	8.1	0.3	1.9	0.2	4.7	0.9	0.0	3.1	2.4	0.7	0.0	88.8	100.0	1,099
Rural	3.6	1.4	0.0	0.5	0.0	0.8	0.1	0.0	2.2	1.8	0.3	0.1	96.4	100.0	3,766
Zoba															
Debubawi Keih Bahri	7.1	5.1	0.1	1.3	0.0	2.5	1.0	0.0	2.0	0.8	1.1	0.1	92.9	100.0	210
Maekel	19.6	14.7	0.4	4.4	1.7	6.2	1.9	0.2	5.0	3.1	1.7	0.2	80.4	100.0	1,103
Semenawi Keih Bahri	5.1	3.2	0.4	0.9	0.1	1.5	0.2	0.0	1.9	1.5	0.4	0.0	94.9	100.0	817
Anseba	4.4	2.7	0.0	0.3	0.1	1.4	0.8	0.0	1.7	1.1	0.6	0.0	95.6	100.0	784
Gash-Barka	1.9	1.1	0.1	0.4	0.0	0.5	0.1	0.0	0.8	0.6	0.1	0.1	98.1	100.0	1,142
Debub	7.9	3.7	0.0	1.0	0.0	2.6	0.1	0.0	4.2	3.5	0.5	0.1	92.1	100.0	1,677
Education															
No education	3.5	1.7	0.1	0.5	0.1	1.0	0.1	0.0	1.8	1.5	0.2	0.0	96.5	100.0	3,549
Primary	10.8	7.0	0.1	1.4	0.3	4.5	0.7	0.0	3.8	3.1	0.5	0.1	89.2	100.0	1,075
Middle	16.7	12.8	0.0	5.0	0.9	5.6	1.3	0.0	3.9	1.5	2.4	0.0	83.3	100.0	400
Secondary +	21.8	15.1	0.5	4.4	1.6	5.6	2.7	0.3	6.7	4.1	2.3	0.3	78.2	100.0	709
Number of living children															
0	0.7	0.6	0.0	0.2	0.0	0.1	0.4	0.0	0.1	0.0	0.0	0.0	99.3	100.0	875
1-2	7.4	4.3	0.1	1.5	0.2	1.6	0.9	0.0	3.1	1.8	1.1	0.2	92.6	100.0	1,802
3-4	11.6	7.2	0.2	1.7	0.8	3.6	0.7	0.1	4.4	3.7	0.7	0.0	88.4	100.0	1,509
5+	9.5	6.7	0.2	1.8	0.3	4.0	0.3	0.0	2.8	2.3	0.5	0.1	90.5	100.0	1,547
Total	8.0	5.1	0.2	1.4	0.4	2.6	0.6	0.0	2.9	2.1	0.7	0.1	92.0	100.0	5,733

Note: If more than one method is used, the most effective method is tabulated here.
LAM= Lactational amenorrhea method

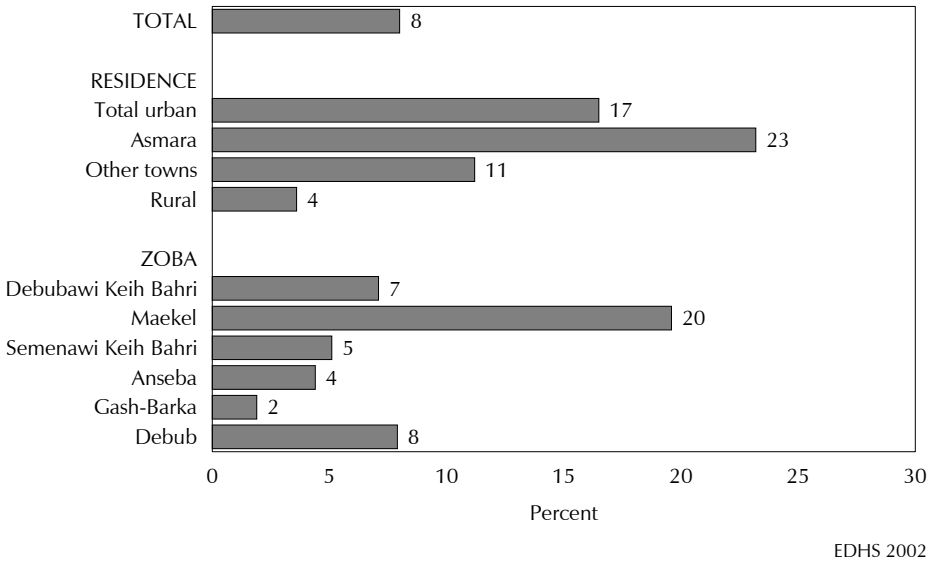
not changed since 1995, although at first glance it may seem incongruent that prevalence has decreased for both urban and rural women, the explanation for this anomaly is the increase in the proportion of women who live in urban areas in the 2002 EDHS since the 1995 survey.

Current Use of Contraception by Background Characteristics

Differentials in the level of current use by background characteristics other than age are presented in Table 5.11.

There are marked differences by background characteristics in current use of family planning methods among currently married women as shown in Figure 5.5 and Table 5.11. Urban women are almost five times as likely to use a method of contraception as rural women. Not surprisingly, current use is highest in Asmara, the most urbanized area in the country, with nearly one in four currently married women reporting use of a method and one in five reporting use of a modern method. By zone, the highest contraceptive prevalence rate (20 percent) is in zoba Maekel, which includes Asmara, and the lowest rate is in zoba Gash-Barka (2 percent). In other zobas, the contraceptive prevalence rates are also low (4-8 percent).

Figure 5.5
Contraceptive Use by Background Characteristics, Currently Married Women 15-49



EDHS 2002

As expected, current use increases with level of education, from 4 percent among women with no education to 11 percent among women with primary education, and 17 percent among those with middle education to 22 percent among women with some secondary education. Current use rises with the number of living children and peaks at 12 percent among women with 3-4 living children, then falls slightly to 10 percent among women with five or more children.

Current Use of Contraception by Women's Status

A woman's desire and ability to control her fertility and her choice of contraceptive methods are in part affected by her status and self-image. A woman who feels that she is unable to control her life may be less likely to feel she can make decisions about childbearing. Table 5.12 shows the distribution of currently married women by contractive use, according to two women's status indicators. Use is directly related to the number of decisions that a woman makes herself or jointly with others. The prevalence of family planning increases from 1 percent among women who are not involved in any decisionmaking to 10 percent among women who have a final say in 5 or 6 decisions.

The prevalence of contraceptive use and the number of reasons women consider wife beating justified (an indicator of women's status) have a negative relationship. The highest prevalence is among women who think that wife beating is not justified for any reason (10 percent). Prevalence is half this level among women who think that wife beating is justified for all five of the specified reasons for which their opinion was sought.

Table 5.12 Current use of contraception by women's status

Percent distribution of currently married women by contraceptive method currently used, according to indicators of women's status, Eritrea 2002

Indicator of women's status	Using any method	Modern method: Any modern method	Female sterilization	Pill	IUD	Injectables	Male condom	Foam/ jelly	Traditional method: Any traditional method	LAM	Periodic abstinence	Withdrawal	Folk method	Not currently using	Total	Number of women
Number of decisions in which woman has final say[1]																
0	1.2	1.2	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	98.8	100.0	189
1-2	4.3	2.2	0.1	0.9	0.2	1.0	0.1	0.0	2.1	1.8	0.2	0.1	0.1	95.7	100.0	1,240
3-4	7.8	4.2	0.1	0.8	0.3	2.8	0.2	0.0	3.5	2.9	0.7	0.0	0.0	92.2	100.0	1,485
5-6	10.3	7.2	0.2	2.1	0.4	3.3	1.1	0.1	3.1	2.1	0.9	0.1	0.0	89.7	100.0	2,819
Number of reasons wife beating is justified																
0	10.2	7.8	0.3	1.6	0.6	4.3	0.9	0.1	2.4	1.6	0.8	0.0	0.0	89.8	100.0	1,543
1-2	8.9	4.9	0.0	1.6	0.7	1.7	0.9	0.0	3.9	3.1	0.7	0.2	0.0	91.1	100.0	1,337
3-4	7.4	4.6	0.1	1.4	0.1	2.7	0.3	0.0	2.8	1.9	0.7	0.1	0.1	92.6	100.0	1,722
5	5.1	2.7	0.3	1.1	0.1	1.0	0.2	0.0	2.4	2.1	0.3	0.0	0.0	94.9	100.0	1,132
Total	8.0	5.1	0.2	1.4	0.4	2.6	0.6	0.0	2.9	2.1	0.7	0.1	0.0	92.0	100.0	5,733

Note: If more than one method is used, the most effective method is tabulated here.
LAM= Lactational amenorrhea method
[1]Herself or jointly with others

First Use of Family Planning

Women who reported that they had used family planning methods at some time were asked about the number of children they had when they first used a method. These data are useful in identifying the stage in the family-building process when women begin using family planning.

Table 5.13 shows the percent distribution of women by the number of living children they had at the time of first use of family planning. More than half (53 percent) of women who have ever used

Table 5.13 Number of children at first use of contraception

Percent distribution of women who have ever used contraception by number of living children at the time of first use of contraception, according to current age, Eritrea 2002

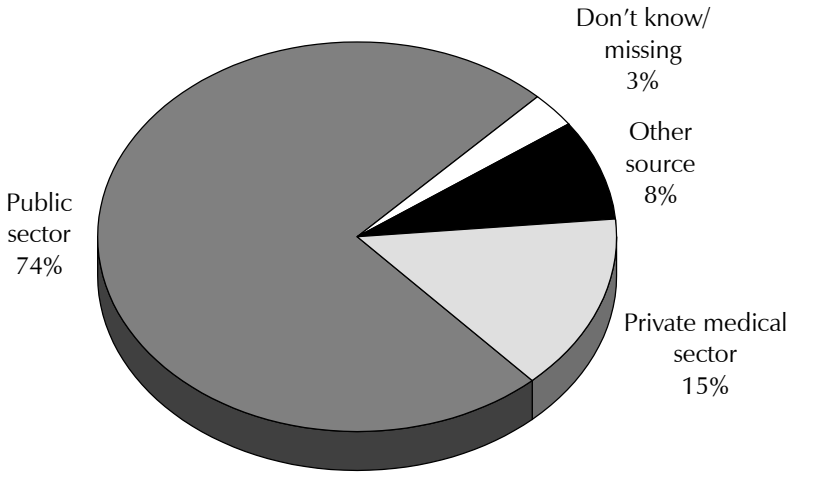
Current age	Number of living children at the time of first use of contraception: 0	1	2	3	4+	Don't know/ missing	Total	Number of women
15-19	44.0	42.1	4.5	0.0	0.0	9.4	100.0	71
20-24	22.5	55.1	13.8	2.1	2.7	3.8	100.0	211
25-29	15.7	48.5	16.7	9.4	5.9	3.7	100.0	382
30-34	14.1	33.3	20.0	10.4	20.1	2.1	100.0	250
35-39	9.0	29.1	16.2	18.7	26.0	0.9	100.0	303
40-44	9.2	26.0	19.5	10.1	35.3	0.0	100.0	169
45-49	6.1	28.4	12.4	7.4	45.6	0.0	100.0	131
Total	14.8	38.5	16.1	9.9	18.2	2.4	100.0	1,516

contraception began using a method before they had two children, including 15 percent of women who were then childless. One-fourth of women who have used contraception initiated use when they had 2-3 children. Eighteen percent used contraception only after they had four or more children. Early use of family planning increases with decreasing age. For example, 44 percent of women age 15-19 began using contraceptives before they had had any children, compared with 6 percent of women age 45-49. In contrast, 45-53 percent of women age 35 and older first began using contraception after they had at least three children.

5.8 SOURCE OF MODERN FAMILY PLANNING METHODS

Information on where women obtain their contraceptives methods is important for family planning program managers. In the 2002 EDHS, information was collected on sources from which modern family planning methods were obtained. For women using female sterilization, the place where the operation was performed was considered the source, while women using other methods were asked the most recent source of the method (Figure 5.6). Table 5.14 shows results for specific methods. As in 1995, three-fourths of pill users and more than 90 percent of users of injectables rely on the public sector. The share of various public sector sources for the pill has remained about the same, with the Family Reproductive Health Association of Eritrea (formerly Planned Parenthood Federation of Eritrea) being the major source for pills. Government health facilities are the predominant source for injectables, providing supplies to 58 percent of users. As expected, women who say they rely on condoms as a method of family planning report shops and pharmacies as the main sources of the method.

Figure 5.6
Distribution of Current Users of Modern Contraceptive Methods by Source of Supply



EDHS 2002

Table 5.14 Source of contraception

Percent distribution of current users of modern contraceptive methods by most recent source of method, according to specific methods, Eritrea 2002

Source	Pill	Inject-ables	Male condoms	All modern methods[1]
Public sector	73.5	91.0	11.3	74.0
Government hospital	18.7	36.0	1.4	26.5
Government health center	18.0	21.7	2.0	16.6
Family Reproductive Health Association	36.8	33.3	7.8	30.9
Private medical sector	20.7	7.3	30.7	14.6
Private hospital or clinic	8.1	3.2	0.4	4.4
Pharmacy	12.6	1.3	26.4	7.9
Private doctor	0.0	2.8	3.9	2.0
Other private medical	0.0	0.0	0.0	0.4
Other source	4.1	0.0	46.7	8.4
Shop	0.0	0.0	31.8	5.0
Friends/relatives	4.1	0.0	14.9	3.4
Don't know	0.0	0.0	11.3	1.8
Missing	1.6	1.7	0.0	1.2
Total	100.0	100.0	100.0	100.0
Number of women	85	160	52	334

[1] Includes 37 cases; 13 users of female sterilization, 22 users of IUD, and 2 users of other modern methods.

5.9 REASONS FOR NONUSE OF CONTRACEPTION

Table 5.15 presents information on the main reasons why women are not using family planning by urban-rural residence. Overall, the most important reasons for not using a contraceptive method were that women were not married (23 percent) or not sexually active (21 percent). Reasons given by 22 percent of women included: had infrequent sex, menopausal or had hysterectomy, subfecund or infecund, or were postpartum amenorrheic. Fourteen percent of women indicated that they were fatalistic (e.g., believe that childbearing is beyond their control); 10 percent reported that they were breastfeeding; 5 percent said that they were opposed to family planning, and 2 percent said that their husbands were opposed to contraception.

From the point of view of family planning programs, the programmatically important reasons for nonuse—knowing no method and knowing no source of methods—were mentioned by 9 percent and 6 percent of women, respectively. Six percent cited either health concerns or fear of side effects of contraceptive methods as reasons for not using, while 2 percent mentioned lack of access to, cost of, or inconvenience in using family planning methods.

There are some important differences in reasons given for not using contraceptive methods by residence. Urban women mention fertility-related reasons more often than rural women. For example, 37 percent of urban women are not using contraceptives because they are not married, in comparison with 13 percent of women in rural area; and 28 percent of urban women are not sexually active compared with 15

percent of rural women. On the other hand, 21 percent of rural women but only 6 percent of urban women cited fatalistic reasons for not using contraception. Not knowing methods and not knowing sources of methods are more frequently mentioned by rural women than by urban women. This clearly points to a need to launch an aggressive campaign of information and education in rural areas, where most nonusers live.

Table 5.15 Reasons for not using family planning

Percent distribution of nonpregnant nonusers by main reason for not using family planning currently, according to residence and desire to limit or space childbearing, Eritrea 2002

	Urban			Rural			Total		
Reason	Wants to limit	Wants to space	Total	Wants to limit	Wants to space	Total	Wants to limit	Wants to space	Total
Fertility-related reason									
Not married	10.7	49.5	36.9	3.3	16.7	12.5	6.7	31.1	23.3
Not having sex	36.3	23.8	27.9	20.7	12.2	14.8	27.8	17.3	20.6
Infrequent sex	14.7	9.8	11.4	10.0	9.9	9.9	12.1	9.9	10.6
Menopausal/had hysterectomy	8.9	0.4	3.2	7.4	0.3	2.5	8.1	0.3	2.8
Subfecund/infecund	4.1	1.2	2.2	6.5	1.0	2.8	5.4	1.1	2.5
Breastfeeding	6.8	8.6	8.0	5.1	14.9	11.8	5.8	12.1	10.1
Postpartum amenorrheic	6.7	3.9	4.8	6.7	7.2	7.0	6.7	5.7	6.0
Opposition to use									
Respondent opposed	3.7	3.5	3.6	6.3	7.2	6.9	5.1	5.6	5.4
Husband opposed	1.8	2.0	2.0	1.3	2.2	1.9	1.6	2.1	1.9
Others opposed	0.0	0.1	0.1	0.0	0.2	0.1	0.0	0.1	0.1
Religious prohibition	1.8	1.2	1.4	1.8	4.0	3.3	1.8	2.7	2.4
Lack of knowledge									
Knows no method	1.6	1.4	1.5	16.9	12.9	14.1	9.9	7.8	8.5
Knows no source	1.0	0.7	0.8	13.0	9.1	10.3	7.6	5.4	6.1
Method-related reason									
Health concerns	6.7	2.5	3.9	4.3	0.7	1.8	5.4	1.5	2.7
Fear of side effects	3.7	4.0	3.9	3.1	2.4	2.7	3.4	3.1	3.2
Lack of access/too far	1.1	0.0	0.3	0.9	0.6	0.7	1.0	0.3	0.5
Costs too much	0.2	0.1	0.1	0.3	0.2	0.2	0.3	0.2	0.2
Inconvenient to use	1.3	0.6	0.8	1.3	0.7	0.9	1.3	0.6	0.9
Interferes with body's normal process	0.9	0.8	0.8	0.3	0.0	0.1	0.6	0.3	0.4
Fatalistic	7.9	5.4	6.2	15.9	23.0	20.8	12.3	15.3	14.3
Other	2.3	3.3	3.0	1.2	2.0	1.7	1.7	2.6	2.3
Don't know	0.1	0.0	0.0	0.4	0.3	0.4	0.3	0.2	0.2
Missing	0.5	1.5	1.2	0.0	0.2	0.1	0.2	0.8	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	541	1,117	1,659	650	1,423	2,073	1,192	2,540	3,732

Note: "Wants to limit" means wants no more children, while "wants to space" refers to women who want another child after two years.

5.10 INTENTION TO USE FAMILY PLANNING AMONG NONUSERS

An important indicator of the changing demand for family planning is the extent to which non-users of contraception intend to use family planning in the future. Women who were not using contraception at the time of the survey were asked about their intention to use family planning in the future. The results for currently married women are presented in Table 5.16.

Among currently married women, 26 percent intend to use in future, 16 percent in the next 12 months and 10 percent after 12 months. Seven in ten nonusers do not intend to use any method in the future, and 3 percent are unsure. The proportion of nonusers intending to use in future, shows no consistent pattern according to number of living children. Since 1995, the proportion of nonusers who do not intend to use has increased from 63 percent to 71 percent.

Table 5.16 Future use of contraception

Percentage of currently married women who are not using a contraceptive method, by intention to use in the future and number of living children, Eritrea 2002

	Number of living children[1]					
Intention	0	1	2	3	4+	Total
Intends to use	21.3	29.8	25.7	31.4	24.5	26.1
In next 12 months	7.5	17.4	15.2	17.3	17.5	15.7
After 12 months	13.8	12.4	10.6	14.1	7.0	10.4
Unsure	4.9	1.5	3.2	3.7	2.6	3.0
Does not intend to use	73.5	68.5	70.6	64.7	72.8	70.7
Missing	0.3	0.1	0.5	0.1	0.1	0.2
Number of women	730	867	800	764	2,112	5,272

[1] Includes current pregnancy

5.11 REASONS FOR NOT INTENDING TO USE A CONTRACEPTIVE METHOD IN THE FUTURE

An understanding of the reasons why people do not use family planning methods is critical to designing programs that are effective in reaching people with unmet need and to improving the quality of family planning services. Table 5.17 shows the main reasons for not intending to use family planning given by currently married nonusers who do not intend to use contraceptive methods in the future. Desire for more children was the most common reason for not intending to use a method in the future for both women 15-29 (71 percent) and women 30-49 (52 percent). Since 1995, there has been a marked increase in the proportion of women who cite this reason for nonuse, from 47 to 60 percent.

More importantly, 13 percent of women would not use any method in the future because they cited religious prohibition or their own or their husband's opposition to family planning methods. Eight percent cited lack of knowledge of methods or sources of methods. These reasons are almost as likely to be mentioned by younger women as by older women.

Table 5.17 Reasons for not intending to use contraception in the future

Percent distribution of currently married women who are not using a contraceptive method and who do not intend to use one in the future by main reason for not intending to use, according to age, Eritrea 2002

Main reason	Age 15-29	Age 30-49	Total
Fertility-related reason	74.7	70.6	72.4
Infrequent sex/no sex	3.5	2.3	2.9
Menopausal/had hysterectomy	0.0	5.6	3.1
Subfecund/infecund	0.5	10.7	6.2
Wants as many children as possible	70.7	52.0	60.3
Opposition to use	12.1	13.5	12.9
Respondent opposed	6.4	5.9	6.2
Husband opposed	0.9	1.4	1.2
Religious prohibition	4.8	6.2	5.6
Lack of knowledge	7.4	8.9	8.2
Knows no method	4.4	4.4	4.4
Knows no source	3.0	4.5	3.9
Method-related reason	4.4	5.6	5.1
Health concerns	1.2	2.5	1.9
Fear of side effects	3.0	2.7	2.9
Lack of access/too far	0.0	0.1	0.1
Costs too much	0.0	0.2	0.1
Inconvenient to use	0.2	0.1	0.1
Interfere with body's normal processes	0.0	0.1	0.0
Other	1.1	1.1	1.1
Don't know	0.2	0.3	0.3
Total	100.0	100.0	100.0
Number of women	1,649	2,078	3,727

5.12 PREFERRED METHOD OF CONTRACEPTION FOR FUTURE USE

Nonusers who planned to use family planning in the future were asked about the method they would prefer to use. Table 5.18 shows that in each subgroup, three-fourths of women prefer pills or injectables. Women age 15-29 prefer pills to injectables, whereas older women prefer injectables to pills. Three percent of nonusers who plan to use in the future prefer condoms, 5 percent among younger women and only 1 percent among older women. For traditional methods, 6 percent and 5 percent of younger and older women, respectively, prefer to use periodic abstinence in the future. It should be noted that 7 percent and 13 percent of younger and older nonusers, respectively, were not sure what method they would prefer to use in the future.

Table 5.18 Preferred method of contraception for future use

Percent distribution of currently married women who are not using a contraceptive method but who intend to use in the future by preferred method, according to age, Eritrea 2002

Preferred method	Age 15-29	Age 30-49	Total
Female sterilization	0.4	0.6	0.5
Pill	41.3	35.9	39.1
IUD	0.9	1.6	1.2
Injectables	35.9	39.1	37.2
Implants	0.4	1.0	0.6
Condom	4.5	1.2	3.2
Female condom	0.1	0.1	0.1
Diaphragm	0.1	0.2	0.2
Lactation amenorrhea	2.9	1.9	2.5
Periodic abstinence	6.0	4.9	5.6
Withdrawal	0.2	0.6	0.4
Other	0.2	0.0	0.1
Unsure	6.9	12.7	9.3
Missing	0.0	0.3	0.1
Total	100.0	100.0	100.0
Number of women	812	565	1,377

5.13 CONTACT OF NONUSERS WITH HEALTH CARE PROVIDERS

To get an insight into the level of "missed opportunities," that is, contacts between nonusers and health workers that are not utilized to provide information about family planning and to motivate them to adopt family planning, nonusers were asked whether they had visited any health facility in the 12 months preceding the survey. Those who had visited a health facility were further asked whether during any visit to the health facility, anyone at the facility discussed family planning with them.

Slightly more than half of nonusers visited a health facility, but only 10 percent of nonusers visited a facility and had a health worker speak to them about family planning (Table 5.19). By age, women 25 to 39 were more likely to discuss family when they visited a health facility than younger or older women. Rural women and women in zoba Debubawi Keih Bahri had the highest level of "missed opportunities." Although women with no education and women with primary education are equally likely to have visited a health facility, those with primary education are more likely to have discussed family planning with a provider than other women.

Table 5.19 Contact of nonusers with family planning providers

Percentage of women who are not using contraception who visited a health facility in the 12 months preceding the survey and discussed family planning and percentage who visited a health facility but did not discuss family planning,, by background characteristics, Eritrea 2002

Background characteristic	Nonusers who visited a health facility in the past 12 months: Discussed family planning	Did not discuss family planning	Total	Number of women
Age				
15-19	2.4	25.6	28.0	1,978
20-24	9.6	43.0	52.6	1,393
25-29	13.6	47.3	61.0	1,416
30-34	14.4	49.2	63.6	1,020
35-39	14.8	48.9	63.7	983
40-44	13.2	44.0	57.2	762
45-49	8.3	41.4	49.7	697
Residence				
Total urban	12.5	39.0	51.4	3,406
Asmara	10.8	33.5	44.3	1,677
Other towns	14.1	44.3	58.4	1,729
Rural	8.3	42.4	50.7	4,844
Zoba				
Debubawi Keih Bahri	6.8	42.9	49.7	304
Maekel	11.0	34.0	44.9	2,026
Semenawi Keih Bahri	9.3	41.2	50.5	1,102
Anseba	10.8	45.3	56.1	1,094
Gash-Barka	8.9	40.8	49.7	1,472
Debub	10.2	45.0	55.2	2,251
Education				
No education	9.4	44.6	53.9	4,257
Primary	13.1	40.4	53.4	1,505
Middle	7.5	33.9	41.4	903
Secondary +	10.2	36.0	46.2	1,585
Total	10.0	41.0	51.0	8,250

OTHER PROXIMATE DETERMINANTS OF FERTILITY 6

This chapter addresses the principal factors other than contraception that influence fertility. Marriage is among the most important of these proximate determinants because it is a primary indicator of women's exposure to the risk of pregnancy. Early age at first marriage in a population is usually associated with a longer period of exposure to the risk of pregnancy and thus higher fertility levels. The early initiation of childbearing associated with early marriage may also adversely affect the health of women and their children.

Besides marriage, this chapter explores three other factors that influence fertility: postpartum amenorrhea, postpartum abstinence, and menopause. Postpartum amenorrhea and postpartum abstinence determine the length of time a woman is insusceptible to pregnancy after childbirth, which affects the length of the birth interval and thus fertility levels. Menopause is important because it marks the end of a woman's period of exposure to the risk of pregnancy.

6.1 CURRENT MARITAL STATUS

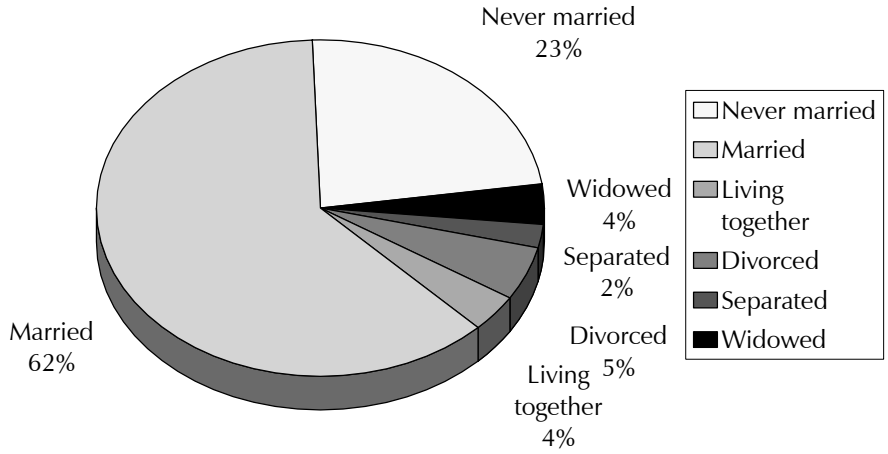
Table 6.1 and Figure 6.1 show the percent distribution of all women age 15-49 by current marital status. Overall, 66 percent of women are currently married (including 4 percent who are living together), 4 percent are widowed, 5 percent are divorced, 2 percent are separated (not living together), and 23 percent have never married. There has been a slight increase in the proportion of women never married since the 1995 EDHS, from 20 percent to 23 percent. In the rest of this report, marriage is defined by including informal as well as formal unions, i.e., the categories "married" and "living together" are

Table 6.1 Current marital status

Percent distribution of women by current marital status, according to age and wealth index, Eritrea 2002

Age and wealth index	Marital status						Total	Number of women
	Never married	Married	Living together	Divorced	Separated	Widowed		
Age								
15-19	69.0	28.2	0.8	1.5	0.5	0.1	100.0	2,001
20-24	27.3	62.0	3.3	4.7	1.8	0.9	100.0	1,454
25-29	11.5	73.5	5.0	6.0	2.4	1.6	100.0	1,543
30-34	4.6	76.3	5.2	6.9	3.5	3.4	100.0	1,109
35-39	2.2	76.9	6.0	6.8	2.9	5.2	100.0	1,085
40-44	0.9	76.3	3.9	5.7	2.8	10.4	100.0	827
45-49	0.9	67.8	3.9	9.7	3.2	14.6	100.0	734
Wealth index								
Lowest	14.9	77.0	1.8	3.3	0.6	2.4	100.0	1,472
Second	14.6	72.7	2.0	5.5	1.0	4.1	100.0	1,626
Middle	14.7	69.4	3.8	6.9	1.9	3.4	100.0	1,674
Fourth	26.3	53.3	5.6	6.4	3.6	4.9	100.0	1,833
Highest	40.0	44.4	4.6	4.1	3.2	3.7	100.0	2,149
Total 2002	**23.3**	**61.8**	**3.7**	**5.2**	**2.2**	**3.7**	**100.0**	**8,754**
Total 1995	20.0	61.4	5.3	6.8	1.7	4.8	100.0	5,054

Figure 6.1
Current Marital Status



EDHS 2002

combined and referred to as "currently married." Respondents who are widowed, divorced, and separated (not living together) make up the remainder of the ever-married category.

The proportion of women who have never married declines sharply with increasing age, from 69 percent at age 15-19 to 27 percent at age 20-24; by age 35 almost all are married. On the other hand, the proportion of women who are currently married increases with age and peaks at age 35-39. The decline in the proportion currently married after age 39 is the result of increasing levels of divorce and widowhood. The proportion widowed increases from less than 1 percent among women age 20-24 to 15 percent among women age 45-49.

The differentials by wealth index show that the proportion never married increases rapidly from one in seven women in the three lowest quintiles to one in four women in the fourth quintile, and two in five women in the highest quintile.

6.2 POLYGYNY

The extent of polygyny in Eritrea was measured by asking currently married women whether their husband or partner had other wives, and if so, how many. Table 6.2 shows the percentage of currently married women by number of co-wives, according to background characteristics. Overall, 9 percent of currently married women in Eritrea are in a polygynous union, compared with 7 percent in 1995. The prevalence of polygynous unions increases with age and peaks at age 35-39; thus, young women are more likely to be in a monogamous union than older women. Women in all urban areas (total urban) and women in rural areas are equally likely to be in a polygynous union; however, there are marked differences between women in Asmara and women in other towns. Women in other towns are twice as likely to be in a polygynous union as women in Asmara (12 percent and 6 percent, respectively). By zoba, zoba Maekel has the lowest level of polygyny (6 percent), and the two Red Sea zobas, Debubawi Keih Bahri and Semenawi Keih Bahri, have the highest levels of polygyny (19 percent and 16 percent, respectively). Between 8 and 9 percent of women in other zobas are in a polygynous union.

Table 6.2 Number of co-wives

Percent distribution of currently married women by number of co-wives, according to background characteristics, Eritrea 2002

Background characteristic	Number of co-wives			Missing	Total	Number of women
	0	1	2+			
Age						
15-19	95.9	2.5	1.4	0.2	100.0	580
20-24	93.6	4.7	1.4	0.3	100.0	950
25-29	91.1	6.1	2.7	0.1	100.0	1,212
30-34	88.7	8.9	2.2	0.1	100.0	904
35-39	87.2	10.2	2.4	0.3	100.0	899
40-44	88.5	9.4	2.1	0.0	100.0	663
45-49	88.9	7.5	3.2	0.4	100.0	526
Residence						
Total urban	90.5	7.5	1.8	0.2	100.0	1,967
Asmara	93.8	3.9	1.8	0.5	100.0	868
Other towns	87.9	10.3	1.9	0.0	100.0	1,099
Rural	90.5	6.9	2.4	0.2	100.0	3,766
Zoba						
Debubawi Keih Bahri	81.0	12.6	6.4	0.0	100.0	210
Maekel	93.0	4.6	1.8	0.6	100.0	1,103
Semenawi Keih Bahri	83.6	13.1	3.0	0.3	100.0	817
Anseba	91.4	7.4	1.1	0.1	100.0	784
Gash-Barka	92.0	6.0	1.9	0.1	100.0	1,142
Debub	92.0	5.7	2.3	0.0	100.0	1,677
Education						
No education	89.3	8.0	2.5	0.2	100.0	3,549
Primary	91.0	6.8	2.2	0.0	100.0	1,075
Middle	93.8	4.3	1.9	0.0	100.0	400
Secondary +	94.1	4.6	0.7	0.6	100.0	709
Wealth index						
Lowest	90.5	7.5	1.7	0.3	100.0	1,161
Second	89.6	7.3	3.1	0.0	100.0	1,215
Middle	90.3	7.4	2.3	0.1	100.0	1,224
Fourth	89.5	7.8	2.4	0.3	100.0	1,079
Highest	92.8	5.5	1.5	0.2	100.0	1,053
Total	90.5	7.1	2.2	0.2	100.0	5,733

There is an inverse relationship between education and polygyny. The proportion of currently married women in a polygynous union decreases from 11 percent among women with no education, to 9 percent among women with a primary education and 5 percent among women with some secondary or higher education. Although education and economic status are generally correlated, there is much less variation in the prevalence of polygyny by wealth index. Seven percent of currently married women in the highest quintile of the wealth index are in a polygynous union, compared with 9-10 percent of women in the other quintiles.

6.3 AGE AT FIRST MARRIAGE

In general, marriage marks the point in a woman's life when childbearing becomes socially acceptable. Women who marry early will, on the average, have longer exposure to the risk of pregnancy; therefore, early age at first marriage usually implies a higher fertility level for a society. In the 2002 EDHS survey, information on age at first marriage was obtained by asking all ever-married respondents the month and year that they started living together with their first husband or partner. The women who could not give the year of their first union were asked the age at which they first married.

Table 6.3 shows that marriage occurs relatively early in Eritrea. Among women age 20-49 as well as among women age 25-49, 20 percent were married by age 15, 48 percent were married by age 18, and 63 percent were married by age 20. The findings also indicate that there has been a sharp decline in the proportion of women married in their early teens. The proportion of women married by age 15 has dropped from 21 percent among women age 30-34 to 9 percent among women age 15-19.

Table 6.3 Age at first marriage

Percentage of women who were first married by specific exact ages and median age at first marriage, according to current age, Eritrea 2002

Current age	Percentage first married by exact age: 15	18	20	22	25	Percentage never married	Number of women	Median age at first marriage
15-19	8.5	na	na	na	na	69.0	2,001	a
20-24	19.6	47.0	63.3	na	na	27.3	1,454	18.3
25-29	16.2	46.4	62.6	74.1	84.9	11.5	1,543	18.4
30-34	20.9	51.8	66.7	76.5	86.4	4.6	1,109	17.8
35-39	19.1	44.2	58.6	73.0	85.7	2.2	1,085	18.6
40-44	21.4	47.4	61.4	75.0	85.1	0.9	827	18.3
45-49	24.6	53.5	64.9	74.8	83.1	0.9	734	17.5
20-49 2002	**19.7**	**48.0**	**62.9**	**na**	**na**	**9.8**	**6,753**	**18.2**
25-49 2002	**19.8**	**48.2**	**62.8**	**74.6**	**85.2**	**5.0**	**5,298**	**18.2**
20-49 1995	23.3	59.0	72.3	na	na	7.8	3,925	16.9
25-49 1995	24.6	60.3	73.0	82.7	89.4	4.0	3,102	16.7

na = Not applicable
[a] Omitted because less than 50 percent of the women married for the first time before age 15

A comparison of the results of the 2002 EDHS and the 1995 EDHS shows that among women 25-49, the proportion married by each age is lower in 2002 than in 1995. For example, the percentage of women married by age 15 has declined from 25 percent to 20 percent in 2002. Three-fourths of women age 25-49 were married by age 22 and 85 percent were married by age 25, compared with 83 percent and 89 percent, respectively, in 1995.

The median age at first marriage for women age 20-49 is 18 years. Since the minimum legal age for a woman to get married in Eritrea is also 18 years, almost half of women marry before the minimum legal age. Since 1995, the median age at first marriage for women age 20-49 and age 25-49 has increased by more than one year (from 17 to 18 years).

6.4 MEDIAN AGE AT FIRST MARRIAGE

Table 6.4 examines the median age at first marriage for women 25-49 by current age and background characteristics. As was shown in Table 6.3, the overall median age at first marriage for women age 25-49 is 18 years. Urban women, especially those in Asmara, are more likely to marry later than their rural counterparts.

The median age at first marriage varies widely by zoba, ranging from 17 years in zoba Gash-Barka to 21 years in zoba Maekel; that is, women in zoba Maekel marry an average of four years later than those in zoba Gash-Barka. The median age in zoba Debubawi Keih Bahri is 20 years. Zobas Semenawi Keih Bahri, Anseba, and Debub have the same median age at first marriage (18 years).

There is a strong relationship between education and age at first marriage. The median age at first marriage for women with no education or with primary education is five years lower than the median age for women with a secondary or higher education. By wealth index, median age at marriage increases from a low of 17 years for women in the lowest quintile to 21 years for women in the highest quintile. The differentials observed for background variables generally hold for all age groups.

Table 6.4 Median age at first marriage

Median age at first marriage among women 25-49, by current age and background characteristics, Eritrea 2002

Background characteristic	Current age					Women age 25-49
	25-29	30-34	35-39	40-44	45-49	
Residence						
Total urban	20.4	19.3	19.0	18.9	17.5	19.3
Asmara	22.5	22.7	21.1	20.5	16.8	21.5
Other towns	18.3	18.0	18.4	18.1	18.3	18.2
Rural	17.2	17.1	18.3	18.0	17.5	17.5
Zoba						
Debubawi Keih Bahri	20.0	19.1	19.9	19.0	20.3	19.7
Maekel	21.7	21.1	20.9	20.1	17.0	20.7
Semenawi Keih Bahri	18.4	17.6	18.2	17.6	18.1	18.0
Anseba	17.5	18.0	18.5	18.2	17.4	17.9
Gash-Barka	16.9	16.7	17.1	16.8	16.5	16.9
Debub	17.1	17.1	18.6	18.6	17.9	17.7
Education						
No education	16.9	17.0	18.1	18.1	17.4	17.4
Primary	17.7	17.7	18.3	18.4	17.9	17.9
Middle	19.3	(17.6)	(21.7)	*	*	18.9
Secondary +	22.9	23.7	22.9	22.2	*	22.8
Wealth index						
Lowest	17.0	17.0	17.0	17.4	17.5	17.1
Second	16.8	17.1	18.3	18.1	17.6	17.5
Middle	17.6	17.3	18.8	17.8	18.3	17.9
Fourth	18.2	17.4	18.7	17.6	17.2	18.0
Highest	21.9	22.2	20.6	20.3	17.2	20.9
Total 2002	**18.4**	**17.8**	**18.6**	**18.3**	**17.5**	**18.2**
Total 1995	17.4	17.1	16.6	16.3	15.9	16.7

Note: Numbers in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a number is based on fewer than 25 unweighted cases and has been suppressed.

6.5 AGE AT FIRST SEXUAL INTERCOURSE

Age at first marriage and age at first sexual intercourse do not always coincide, because women may engage in sexual relations prior to marriage. Thus, using marriage alone as an indicator of sexual activity will result in an underestimate of the proportion of women who are sexually active. To avoid the problem, the 2002 EDHS asked women to give the age at which they first had sexual intercourse.

Table 6.5 shows the percentage of women who had first sexual intercourse by specific ages. The findings indicate that 20 percent of women age 20-49 had sexual intercourse by age 15, 50 percent by age 18, and 65 percent by age 20.

The median age at first intercourse for women age 25-49 and the median age at first marriage are almost the same (18 years). This suggests that women generally begin sexual intercourse at the time of marriage. Furthermore, median age at first sex across age groups is similar to median age at first marriage, indicating little change over time in the pattern of initiation of sexual activity. However, women in age group 45-49 have a much lower median age at first intercourse than younger women.

Table 6.5 Age at first sexual intercourse

Percentage of women who had first sexual intercourse by specific exact ages and median age at first intercourse, according to current age, Eritrea 2002

Current age	Percentage of women who had first sexual intercourse by exact age: 15	18	20	22	25	Percentage that never had intercourse	Number of women	Median age at first intercourse
15-19	8.8	na	na	na	na	67.6	2,001	a
20-24	19.4	46.9	64.3	na	na	25.2	1,454	18.3
25-29	15.7	46.6	62.8	72.8	82.1	9.9	1,543	18.3
30-34	20.3	51.9	66.8	74.6	83.4	3.6	1,109	17.7
35-39	18.4	48.1	62.6	74.5	82.1	1.5	1,085	18.2
40-44	21.5	49.5	62.8	75.8	82.1	0.7	827	18.1
45-49	28.5	61.8	72.0	80.1	86.2	0.5	734	16.4
20-49 2002	**19.8**	**49.8**	**64.8**	**na**	**na**	**8.7**	**6,753**	**18.0**
25-49 2002	**19.9**	**50.6**	**64.9**	**75.0**	**82.9**	**4.1**	**5,298**	**17.9**
20-49 1995	21.0	56.9	70.7	79.3	84.7	7.2	3,925	17.0
25-49 1995	22.3	58.6	71.3	80.6	86.8	3.6	3,102	16.8

na = Not applicable
[a]Omitted because less than 50 percent of the women had intercourse for the first time before age 15

6.6 MEDIAN AGE AT FIRST INTERCOURSE

Table 6.6 shows the median age at first intercourse among women age 25-49 by current age and background characteristics. There are marked differences in the median age at first intercourse by residence. Women start sexual intercourse at a younger age in rural areas (17 years) than in urban areas (19 years); in Asmara the average is 21 years. By zoba, age at first sexual intercourse is the lowest in zobas Gash-Barka and Debub (17 years), followed by zobas Semenawi Keih Bahri and Anseba (18 years); it is highest in zoba Maekel (20 years).

Table 6.6 Median age at first sexual intercourse

Median age at first sexual intercourse among women 25-49, by current age and background characteristics, Eritrea 2002

Background characteristic	Current age					Women age 25-49
	25-29	30-34	35-39	40-44	45-49	
Residence						
Total urban	20.2	19.0	18.8	18.7	16.0	18.9
Asmara	22.4	22.5	19.8	20.0	15.8	20.6
Other towns	18.1	17.7	18.4	17.6	16.9	18.0
Rural	17.2	16.8	17.5	17.6	16.6	17.1
Zoba						
Debubawi Keih Bahri	19.7	19.0	19.4	18.9	20.0	19.4
Maekel	21.6	20.3	19.5	19.5	15.9	20.0
Semenawi Keih Bahri	18.3	17.7	18.1	17.5	17.3	17.9
Anseba	17.6	18.1	18.7	18.6	17.3	18.0
Gash-Barka	17.0	16.6	17.0	16.7	15.8	16.7
Debub	16.9	16.6	17.2	17.5	16.0	16.8
Education						
No education	16.9	16.9	17.4	17.5	16.3	17.0
Primary	17.9	17.0	17.6	18.3	16.5	17.5
Middle	18.6	(18.4)	(20.4)	*	*	18.5
Secondary +	22.6	23.3	22.3	21.2	*	22.5
Wealth index						
Lowest	17.1	16.9	16.8	17.4	17.1	17.0
Second	16.9	17.1	17.9	17.3	16.5	17.2
Middle	17.5	16.8	18.2	17.8	16.2	17.3
Fourth	18.0	17.2	18.0	17.0	16.1	17.6
Highest	21.9	21.7	20.1	19.8	16.2	20.4
Total 2002	**18.3**	**17.7**	**18.2**	**18.1**	**16.4**	**17.9**
Total 1995	17.7	17.1	16.8	16.4	16.0	16.8

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Median age at first sexual intercourse increases with women's education. Women with at least a secondary-level education tend to delay sexual relations more than 5 years later than women with no education. Between the 1995 EDHS and the 2002 EDHS, the median age at first sexual intercourse for women increased by one year.

6.7 RECENT SEXUAL ACTIVITY

In societies with low levels of contraceptive use, the probability of becoming pregnant is related to exposure to and frequency of sexual intercourse. Information on sexual activity is useful as a measure of exposure to the risk of pregnancy. Table 6.7 shows the percent distribution of women by the timing of last sex, according to background characteristics.

During the four weeks before the survey, 38 percent of women age 15-49 were sexually active, 22 percent had been sexually active in the past 12 months but not in the four weeks before the survey, and 14 percent had had sex at some time but not in the past 12 months. The proportion of women who were

Table 6.7 Recent sexual activity

Percent distribution of women by timing of last sexual intercourse, according to background characteristics, Eritrea 2002

Background characteristic	Timing of last sexual intercourse: Within the past 4 weeks	Within 1 year[1]	One or more years ago	Missing	Never had sexual intercourse	Total	Number of women
Age							
15-19	11.6	15.9	3.2	1.7	67.6	100.0	2,001
20-24	28.0	28.3	13.9	4.5	25.2	100.0	1,454
25-29	39.9	27.9	16.4	5.9	9.9	100.0	1,543
30-34	48.8	25.0	17.0	5.5	3.6	100.0	1,109
35-39	54.1	23.5	15.9	4.9	1.5	100.0	1,085
40-44	60.6	15.5	18.4	4.7	0.7	100.0	827
45-49	56.7	12.6	26.0	4.2	0.5	100.0	734
Marital status							
Never married	0.7	1.9	2.9	0.3	94.2	100.0	2,044
Married or living together	56.6	30.7	8.2	4.3	0.2	100.0	5,733
Divorced/separated/widowed	4.2	11.7	71.4	12.4	0.2	100.0	977
Marital duration for women married only once[2]							
0-4 years	44.9	42.1	8.0	4.0	1.0	100.0	1,214
5-9 years	48.2	35.1	12.5	4.2	0.0	100.0	1,132
10-14 years	54.1	28.8	10.7	6.4	0.0	100.0	856
15-19 years	63.0	28.1	4.9	4.0	0.0	100.0	647
20-24 years	71.0	21.4	4.5	3.1	0.0	100.0	504
25+ years	79.5	14.6	4.4	1.5	0.0	100.0	538
Married more than once	59.2	28.5	7.0	5.4	0.0	100.0	843
Residence							
Total urban	31.1	16.5	15.4	4.3	32.7	100.0	3,767
Asmara	27.5	13.8	15.3	4.3	39.1	100.0	1,899
Other towns	34.8	19.2	15.5	4.3	26.2	100.0	1,868
Rural	42.7	26.0	12.9	4.2	14.2	100.0	4,987
Zoba							
Debubawi Keih Bahri	42.2	17.9	16.4	4.9	18.6	100.0	324
Maekel	28.8	15.3	14.6	4.4	36.9	100.0	2,264
Semenawi Keih Bahri	48.2	18.5	13.0	2.6	17.7	100.0	1,148
Anseba	41.4	22.8	10.3	3.4	22.1	100.0	1,130
Gash-Barka	46.0	25.2	13.6	4.0	11.2	100.0	1,500
Debub	33.6	27.7	15.5	5.4	17.7	100.0	2,388
Education							
No education	49.4	24.3	15.8	4.7	5.8	100.0	4,384
Primary	32.6	26.5	15.1	5.1	20.8	100.0	1,637
Middle	19.6	18.7	10.2	3.6	48.0	100.0	974
Secondary +	23.3	13.4	10.7	2.8	49.8	100.0	1,760
Current contraceptive method							
Pill	70.6	26.1	0.0	3.2	0.0	100.0	85
Condom	54.1	39.1	6.8	0.0	0.0	100.0	52
Periodic abstinence	62.4	33.9	3.7	0.0	0.0	100.0	41
Other method[3]	65.0	26.0	5.7	3.2	0.0	100.0	327
No method	36.1	21.5	14.6	4.4	23.5	100.0	8,250
Wealth index							
Lowest	52.0	21.6	8.0	3.5	14.9	100.0	1,472
Second	44.0	25.3	11.7	4.7	14.4	100.0	1,626
Middle	36.9	27.1	18.1	3.9	14.0	100.0	1,674
Fourth	29.7	22.8	17.4	5.8	24.2	100.0	1,833
Highest	30.6	14.6	13.7	3.4	37.6	100.0	2,149
Total	37.7	21.9	14.0	4.3	22.2	100.0	8,754

[1] Excludes women who had sexual intercourse within the past four weeks
[2] Currently married women only
[3] Includes 11 sterilized women and 14 women using IUD

sexually active in the four weeks before the survey increases with age up to age 40-44, and increases with the number of years in union. For example, 80 percent of women who have been married for 25 years or longer were sexually active in the four weeks before the survey, compared with only 45 percent of recently married women (0-4 years before the survey).

A higher proportion of women were sexually active during the four weeks before the survey in zobas Semenawi Keih Bahri (48 percent), Gash-Barka (46 percent), Debubawi Keih Bahri (42 percent) and Anseba (41 percent) than in zobas Debub (34 percent) and Maekel (29 percent). Four in ten rural women compared with three in ten urban women had sex in the past four weeks. Recent sexual activity is inversely related to level of education. The proportion of women who were recently sexually active falls from 49 percent among women with no education to 20 percent among women with middle school education. The lower proportion sexually active among women in urban areas and those with more education is due to a greater proportion of unmarried women in these subgroups. Women who are current users of contraceptive methods were more likely to be sexually active in the four weeks before the survey than those who are not using a method. One important factor is that almost one-fourth of women who were not using a contraceptive method had never had sex. The proportion of women who had sex in the four weeks before the survey varies by type of method used, ranging from 71 percent among women who rely on the pill to 54 percent among condom users.

There is a marked difference in recent sexual activity by wealth index. Among women in the lowest quintile of the wealth index, 52 percent were sexually active during the four weeks preceding the survey, compared with 31 percent among women in the highest quintile. The latter group has a high proportion of women who never had sex.

6.8 POSTPARTUM AMENORRHEA, ABSTINENCE, AND INSUSCEPTIBILITY

Studies have shown that for a few weeks or months after the birth of a child, a woman does not ovulate and therefore is not susceptible to pregnancy. This period, during which a woman is temporarily infecund, is known as postpartum amenorrhea, which may be six weeks or longer, depending on whether and how a woman breastfeeds. Thus, besides contraceptive use and cultural norms that may dictate sexual abstinence after childbirth, exposure to pregnancy is influenced by breastfeeding practices. Women are considered insusceptible if they are not exposed to the risk of pregnancy because they are either amenorrheic or abstaining from sexual intercourse after a birth. Table 6.8 shows the percentage of women who gave birth in the three years before the survey who are still amenorrheic, abstaining, and insusceptible to the risk of pregnancy.

The proportion of women remaining amenorrheic, abstaining, or insusceptible declines as the interval since the birth increases. During the first two months after a birth, 94 percent of women in Eritrea are amenorrheic, 90 percent are abstaining, and almost all (99 percent) are insusceptible to pregnancy. Eritrean women are amenorrheic for a median duration of 14 months, abstain only for a median of 3 months, and are insusceptible to pregnancy for a median of 15 months. After six months (the recommended duration for exclusive breastfeeding), 81 percent of women are still insusceptible to pregnancy, mainly because their menstrual period has not returned. By 34-35 months after birth, only 4 percent are amenorrheic and the same proportion is abstaining; 6 percent are insusceptible to pregnancy.

Table 6.8 Postpartum amenorrhea, abstinence and insusceptibility

Percentage of births in the three years preceding the survey for which mothers are postpartum amenorrheic, abstaining, and insusceptible, by number of months since birth, and median and mean durations, Eritrea 2002

Months since birth	Postpartum: Amenorrheic	Postpartum: Abstaining	Postpartum: Insusceptible	Number of births
< 2	94.4	90.3	99.0	202
2-3	85.2	55.5	89.2	246
4-5	84.8	25.1	88.1	227
6-7	77.0	17.0	80.6	231
8-9	74.8	14.8	76.0	209
10-11	74.1	18.6	78.9	203
12-13	52.8	8.9	54.9	190
14-15	43.2	11.2	53.2	187
16-17	31.5	12.6	41.4	153
18-19	26.0	9.1	31.7	173
20-21	24.6	15.7	35.0	147
22-23	13.6	10.5	22.9	158
24-25	11.9	10.7	22.3	227
26-27	8.5	8.7	15.8	231
28-29	6.7	10.5	17.0	164
30-31	3.0	5.8	7.6	145
32-33	9.5	9.2	17.7	170
34-35	3.6	3.5	6.2	160
Total 2002	**43.6**	**20.1**	**49.7**	**3,424**
Median 2002	**13.5**	**3.0**	**14.6**	**na**
Mean 2002	**14.8**	**7.1**	**17.0**	**na**
Total 1995	44.5	14.8	48.0	2,556
Median 1995	14.2	2.7	16.6	na
Mean 1995	16.0	5.4	17.3	na

Note: Estimates are based on status at the time of the survey.
na = Not applicable

6.9 MEDIAN DURATION OF POSTPARTUM INSUSCEPTIBILITY BY BACKGROUND CHARACTERISTICS

The median duration of postpartum insusceptibility by various background characteristics is shown in Table 6.9 and Figure 6.2. There is little variation in the duration of postpartum abstinence; therefore, the observed variation in postpartum insusceptibility is mainly due to differences in the duration of postpartum amenorrhea. Women under 30 are insusceptible to pregnancy for a shorter period of time than women 30 years and older because they have a shorter period of amenorrhea.

Rural women remain amenorrheic and insusceptible after birth for 2-3 months longer than urban women. Women in zobas Debub and Semenawi Keih Bahri have the longest duration of amenorrhea (15 months), while women in zobas Debubawi Keih Bahri and Maekel have the shortest duration (11 months). Insusceptibility to pregnancy is shortest in zoba Maekel (13 months) and longest in zobas Debub and Semenawi Keih Bahri (16 months).

Table 6.9 Median duration of postpartum insusceptibility by background characteristics

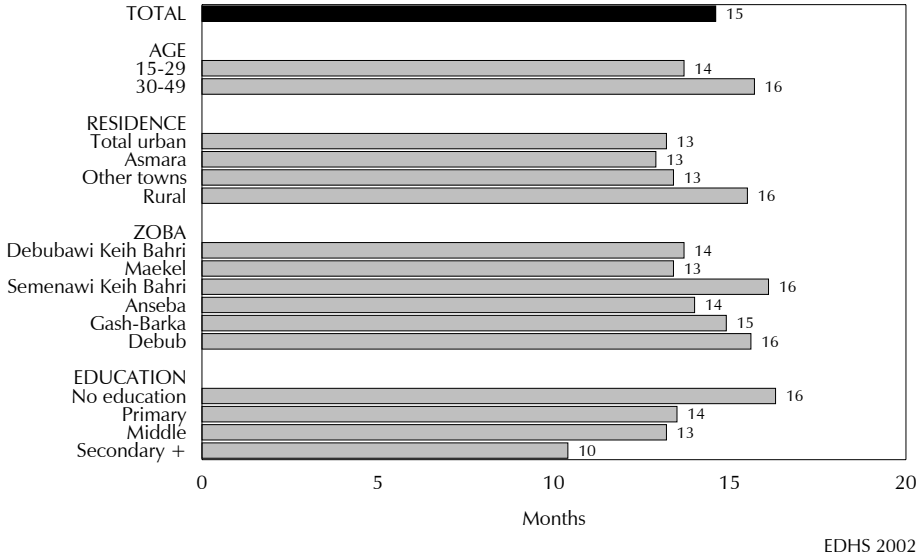
Median number of months of postpartum amenorrhea, postpartum abstinence, and postpartum insusceptibility for births in the three years preceding the survey, by background characteristics, Eritrea 2002

Background characteristic	Postpartum: Amenorrhea	Postpartum: Abstinence	Postpartum: Insusceptibility	Number of births
Age				
15-29	12.8	3.2	13.7	1,776
30-49	14.6	2.7	15.7	1,648
Residence				
Total urban	11.2	3.1	13.2	1,136
Asmara	9.6	3.3	12.9	491
Other towns	12.1	2.9	13.4	645
Rural	14.5	3.0	15.5	2,287
Zoba				
Debubawi Keih Bahri	11.4	3.2	13.7	113
Maekel	11.4	2.8	13.4	634
Semenawi Keih Bahri	14.7	2.7	16.1	457
Anseba	13.7	2.6	14.0	511
Gash-Barka	13.8	3.1	14.9	660
Debub	14.7	3.3	15.6	1,048
Education				
No education	15.3	3.0	16.3	2,117
Primary	12.9	2.9	13.5	612
Middle	12.6	3.0	13.2	249
Secondary +	8.4	3.0	10.4	445
Wealth index				
Lowest	15.1	2.5	15.5	730
Second	14.2	3.3	14.5	724
Middle	14.9	3.5	17.6	725
Fourth	13.6	2.5	14.4	686
Highest	8.8	2.9	9.9	560
Total	13.5	3.0	14.6	3,424

Note: Medians are based on current status.

There is an inverse relation between women's education and insusceptibility to the risk of pregnancy; the median duration of amenorrhea and insusceptibility shorten as women's education increases. The duration of amenorrhea declines with increasing wealth; however, the relationship between insusceptibility and the wealth index has no discernable pattern. The median duration of insusceptibility is highest for births to women in the middle quintile of the wealth index. In Table 6.9, the number of months of postpartum amenorrhea and insusceptibility are lowest for births to women in the highest quintile of the wealth index. A comparison of the results of the 1995 EDHS and the 2002 EDHS indicates that median duration of insusceptibility has decreased by two months in Eritrea over the period. However, there has been practically no change in the median duration of abstinence or amenorrhea.

Figure 6.2
Median Duration of Postpartum Insusceptibility by Background Characteristics



EDHS 2002

6.10 MENOPAUSE

Table 6.10 shows the percentage of women age 30-49 who are menopausal. In the context of the available survey data, women are considered menopausal if they are neither pregnant nor postpartum amenorrheic but have not had a menstrual period for at least six months preceding the survey. Twelve percent of Eritrean women age 30-49 are menopausal. As expected, the proportion of women in menopause increases with age, particularly after age 40. Only 1 percent of women in their early thirties, 4 percent of the women in their late thirties, and 12 percent of women age 40-41 are menopausal. The proportion of women in menopause rises sharply from 18 percent at age 42-43 to 54 percent at age 48-49.

Table 6.10 Menopause

Percentage of women age 30-49 who are menopausal, by age, Eritrea 2002

Age	Percentage menopausal[1]	Number of women
30-34	1.3	1,109
35-39	3.8	1,085
40-41	11.9	577
42-43	17.8	171
44-45	25.7	353
46-47	39.4	193
48-49	53.6	266
Total	12.4	3,755

[1] Percentage of all women who are not pregnant and not postpartum amenorrheic whose last menstrual period occurred six or more months preceding the survey

FERTILITY PREFERENCES AND UNMET NEED FOR FAMILY PLANNING

7

The subject of future reproductive preferences is of fundamental importance for population policy and for family planning programs. Whether couples want to cease childbearing or delay the next pregnancy determines the demand for family planning. The data on this fertility preference indicator and current contraceptive use allow estimation of unmet need for family planning. Another indicator of fertility preferences which pertains to both past and future reproductive behavior, perhaps the most common measure of fertility preference, is ideal number of children—i.e., how many children a woman would want in total if she could start afresh. The information on ideal family size (ideal number of children) provides two measures. First, for women who have not yet started childbearing, the data provide an idea of future fertility (to the extent that women are able to realize their fertility desires). Second, for all women, the excess of past fertility over the ideal family size provides a measure of unwanted fertility. Another topic that is discussed in this chapter is fertility planning in the past and future. The last two sections focus on the planning status of births in the five years preceding the survey (and current pregnancies) and attitudes of nonusers toward unplanned pregnancies in the near future.

7.1 REPRODUCTIVE PREFERENCES

To obtain information on fertility preferences, currently married nonpregnant women were asked the question: "Would you like to have a/another child or would you prefer not to have any more children?" For pregnant women, the wording, "After the child you are expecting…" prefaced the question. Women who said that they did want to have another child were then asked how long they would like to wait before the birth of the next child.

Women's reproductive preferences are summarized in Table 7.1 and Figure 7.1. More than half of currently married women (56 percent) express a desire to control their future fertility. Seventeen percent of women report that they do not want any more children, and another 39 percent express a desire

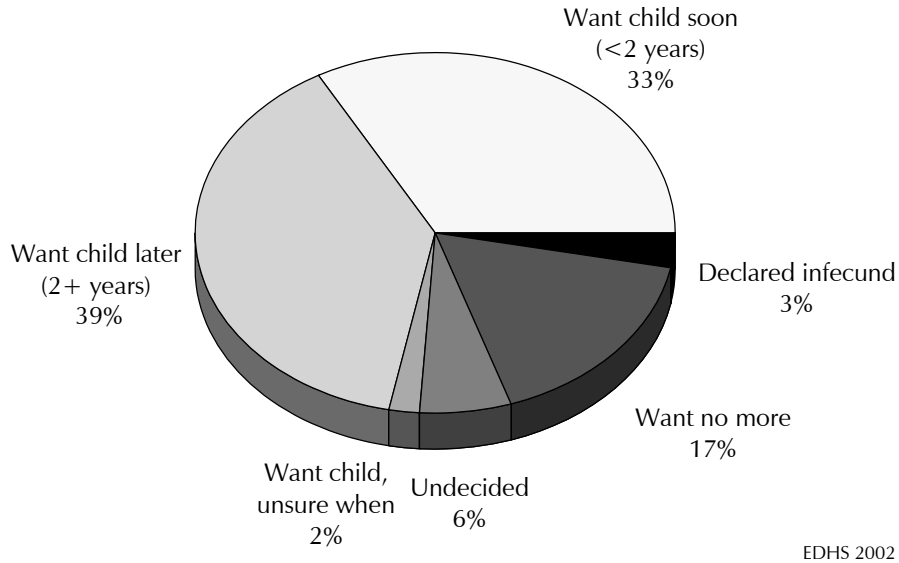
Table 7.1 Fertility preferences by number of living children

Percent distribution of currently married women by desire for children, according to number of living children, Eritrea 2002

Desire for children	Number of living children[1]								Total
	0	1	2	3	4	5	6	7+	
Have another soon[2]	69.0	40.9	36.2	30.5	25.0	20.2	15.8	10.8	33.0
Have another later[3]	23.8	51.4	49.6	50.1	41.0	34.2	28.2	15.5	38.6
Have another, undecided when	1.3	1.2	1.8	2.3	1.9	4.1	1.7	1.9	1.9
Undecided	3.9	3.4	4.4	5.2	7.3	10.0	9.6	9.8	6.2
Want no more	0.8	2.2	5.6	9.7	21.8	26.4	41.0	55.8	17.4
Sterilized	0.0	0.0	0.2	0.1	0.3	0.5	0.0	0.2	0.2
Declared infecund	0.9	0.7	1.8	1.7	2.6	4.5	3.7	6.1	2.5
Missing	0.3	0.2	0.4	0.4	0.1	0.1	0.0	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	736	921	879	857	705	546	440	649	5,733

[1] Includes current pregnancy
[2] Want next birth within 2 years
[3] Want to delay next birth for 2 years

Figure 7.1
Fertility Preferences of Currently Married Women



to have a child after at least two years. The desire for a child is strongly related to the number of living children a woman has. The desire to delay childbearing among women with no children is 24 percent, doubling to 50-51 percent among women with 1-3 children, and then declining to 16 percent among women with seven or more children. The proportion of women who want no more children increases slowly with number of living children. Eritrean women exhibit pronatalist tendencies in that less than half of women with up to six children want to cease childbearing. One-fourth of women with five children, four in ten of women with six children, and just over half (56 percent) of women with seven or more children want to cease childbearing. Among women with the seven or more children, 11 percent want to have another child soon and another 16 percent want a child later.

7.2 DESIRE TO LIMIT CHILDBEARING BY BACKGROUND CHARACTERISTICS

Table 7.2 shows the variation in the percentage of currently married women who want no more children (or who are sterilized) for various groups, according to the number of living children (including any current pregnancy). The results indicate that a higher proportion of urban women want to limit family size than rural women. Women in zobas Maekel and Debub are not as pronatalist as those in other zobas. Differentials by education present an interesting picture. Although overall, the proportions of uneducated women and women with some secondary school education who want no more children are almost the same, the proportion of educated women who want no more children is much higher at all parities for which comparisons can be made. The largest difference is among women with four children; half of these women who have secondary or higher education want to stop childbearing, compared with 14 percent of uneducated women. The differentials by wealth index indicate that women in the fourth and highest quintiles are more likely to want to stop childbearing than women in other quintiles.

Table 7.2 Desire to limit childbearing by background characteristics

Percentage of currently married women who want no more children, by number of living children and background characteristics, Eritrea 2002

Background characteristic	Number of living children[1]								Total
	0	1	2	3	4	5	6	7+	
Residence									
Total urban	0.0	3.6	9.8	14.4	38.2	39.5	53.4	69.0	22.4
Asmara	0.0	4.4	12.7	20.6	50.2	(43.5)	(61.9)	(81.8)	25.6
Other towns	0.0	2.7	7.7	10.0	27.1	36.9	48.0	62.9	19.9
Rural	1.0	1.4	3.2	6.6	12.2	20.5	36.2	52.1	15.0
Zoba									
Debubawi Keih Bahri	0.0	6.0	6.0	14.5	27.0	30.6	26.9	24.7	13.0
Maekel	0.0	3.8	12.4	17.7	45.2	39.3	47.1	66.4	24.6
Semenawi Keih Bahri	0.0	0.8	5.1	8.5	15.3	19.6	34.2	42.5	12.4
Anseba	0.0	0.0	1.0	5.5	9.7	11.9	32.5	48.1	14.6
Gash-Barka	1.0	4.2	6.5	8.6	15.9	28.2	48.7	55.9	16.1
Debub	1.8	0.3	3.2	7.3	17.2	30.6	42.2	61.9	18.4
Education									
No education	1.1	1.8	4.8	7.8	13.9	22.6	40.5	53.2	18.4
Primary	0.8	1.2	4.1	7.9	17.0	37.5	31.3	64.4	14.3
Middle	0.0	0.0	6.7	(19.4)	(65.2)	*	*	*	17.7
Secondary +	0.0	5.3	11.1	16.7	49.8	*	*	*	18.1
Wealth index									
Lowest	0.6	2.0	3.2	7.4	10.4	19.7	30.9	47.2	18.1
Second	1.9	1.2	3.0	5.6	7.7	15.4	39.4	52.3	13.4
Middle	0.0	2.1	3.4	6.6	15.1	28.6	35.5	61.4	14.3
Fourth	1.3	2.1	8.9	9.6	32.6	39.5	53.9	57.8	19.5
Highest	0.0	3.4	9.6	18.7	45.6	38.8	55.9	79.4	23.7
Total	0.8	2.2	5.8	9.8	22.1	26.8	41.0	56.0	17.6

Note: Women who have been sterilized are considered to want no more children. Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
[1] Includes current pregnancy

7.3 NEED FOR FAMILY PLANNING SERVICES

One of the major concerns of family planning programs is to assess the size of the potential demand for contraception and to identify women who are in need of contraceptive services. Table 7.3 presents estimates of unmet need, met need, and the total demand for family planning in Eritrea. The table also shows the percentage of the total demand that is satisfied.

Women who are currently married and who either do not want any more children or want to wait two or more years before having another child, but are not using contraception, are considered to have an *unmet need* for family planning. Women with a *met need* for family planning are those who are currently using contraception. The *total demand* for family planning is the sum of unmet need and met need.

According to Table 7.3, the total unmet need in Eritrea is 27 percent, 21 percent for spacing and 6 percent for limiting. Combining total unmet need with the 8 percent of married women who are

Table 7.3 Need for family planning

Percentage of currently married women with unmet need for family planning and with met need for family planning, and the total demand for family planning, by background characteristics, Eritrea 2002

Background characteristic	Unmet need for family planning[1]			Met need for family planning (currently using)[2]			Total demand for family planning			Percentage of demand satisfied	Number of women
	For spacing	For limiting	Total	For spacing	For limiting	Total	For spacing	For limiting	Total		
Age											
15-19	41.7	1.2	42.8	2.4	0.0	2.4	44.0	1.2	45.2	5.2	580
20-24	27.2	1.2	28.4	5.5	0.4	5.9	32.7	1.6	34.3	17.2	950
25-29	19.7	1.7	21.3	9.1	0.9	10.0	28.8	2.6	31.4	32.0	1,212
30-34	24.4	4.5	28.9	6.1	2.9	9.0	30.5	7.4	37.9	23.8	904
35-39	17.2	11.3	28.5	3.8	6.3	10.1	21.0	17.6	38.6	26.1	899
40-44	10.8	12.5	23.3	2.2	7.1	9.3	12.9	19.7	32.6	28.5	663
45-49	4.2	15.2	19.4	1.6	5.3	6.9	5.8	20.5	26.3	26.3	526
Residence											
Total urban	18.8	6.0	24.8	10.1	6.4	16.5	28.9	12.4	41.3	40.0	1,967
Asmara	16.8	5.1	21.8	14.2	9.0	23.2	31.0	14.1	45.1	51.5	868
Other towns	20.4	6.7	27.0	6.9	4.3	11.2	27.3	11.0	38.3	29.3	1,099
Rural	22.2	6.0	28.2	2.4	1.2	3.6	24.6	7.3	31.9	11.3	3,766
Zoba											
Debubawi Keih Bahri	14.8	4.5	19.3	5.3	1.8	7.1	20.1	6.3	26.3	26.9	210
Maekel	19.1	5.7	24.8	11.9	7.7	19.6	31.0	13.5	44.4	44.2	1,103
Semenawi Keih Bahri	20.2	3.4	23.6	4.0	1.1	5.1	24.2	4.5	28.7	17.7	817
Anseba	19.6	4.1	23.7	2.5	1.9	4.4	22.1	6.0	28.1	15.7	784
Gash-Barka	20.9	6.2	27.1	1.2	0.8	1.9	22.1	6.9	29.0	6.6	1,142
Debub	24.3	8.4	32.7	4.8	3.0	7.9	29.1	11.5	40.6	19.4	1,677
Education											
No education	19.5	6.8	26.3	1.7	1.7	3.5	21.3	8.5	29.8	11.7	3,549
Primary	23.9	4.5	28.4	6.7	4.2	10.8	30.6	8.7	39.3	27.6	1,075
Middle	30.6	4.7	35.3	9.8	6.9	16.7	40.3	11.7	52.0	32.1	400
Secondary +	18.8	5.1	24.0	16.3	5.4	21.8	35.2	10.6	45.8	47.6	709
Wealth index											
Lowest	20.6	6.5	27.1	0.9	0.8	1.7	21.5	7.3	28.8	5.9	1,161
Second	21.9	5.8	27.7	1.6	1.0	2.6	23.5	6.8	30.3	8.5	1,215
Middle	26.0	5.3	31.3	2.8	1.5	4.3	28.8	6.8	35.6	12.0	1,224
Fourth	21.1	6.6	27.7	8.0	5.3	13.2	29.1	11.9	40.9	32.3	1,079
Highest	14.8	5.8	20.6	13.1	7.3	20.4	27.9	13.1	41.0	49.8	1,053
Total	21.0	6.0	27.0	5.0	3.0	8.0	26.1	9.0	35.1	22.9	5,733

[1] *Unmet need for spacing* includes pregnant women whose pregnancy was mistimed, amenorrheic women who are not using family planning and whose last birth was mistimed, and fecund women who are neither pregnant nor amenorrheic and who are not using any method of family planning and say they want to wait two or more years for their next birth. Also included in unmet need for spacing are fecund women who are not using any method of family planning and say they are unsure whether they want another child or who want another child but are unsure when to have the birth unless they say it would not be a problem if they discovered they were pregnant in the next few weeks. *Unmet need for limiting* refers to pregnant women whose pregnancy was unwanted, amenorrheic women whose last child was unwanted, and to fecund women who are neither pregnant nor amenorrheic and who are not using any method of family planning and who want no more children.

[2] *Using for spacing* is defined as women who are using some method of family planning and say they want to delay their next child or are undecided whether to have another. *Using for limiting* is defined as women who are using and who want no more children. Note that the specific methods used are not taken into account.

currently using a contraceptive method yields the total demand for family planning, which encompasses more than one-third of married women in Eritrea. It was noted in Chapter 5 that contraceptive prevalence has not changed since 1995; interestingly, levels of unmet need for spacing and unmet need for limiting are also the same as those reported in 1995.

By age, unmet need for family planning is highest among women age 15-19 (43 percent), and lowest among women age 45-49 (19 percent); a substantial portion of the latter group are menopausal (see Table 6.10). Virtually all unmet need among women under age 30 is for spacing births, while for women in their forties, unmet need is mainly for limiting births. Although in 1995 unmet need in urban areas was higher than in rural areas, the opposite was seen in the 2002 EDHS—a slightly higher level of unmet need in rural areas. Substantial zoba differences are observed in unmet need for contraception, from a low of 19 percent in zoba Debubawi Keih Bahri to 27 percent in zoba Gash-Barka and 33 percent in zoba Debub. Unmet need increases from 26 percent for uneducated women to 35 percent for women who have attained middle-school level, and then declines to 24 percent among women with at least secondary-school education. Unmet need is practically the same among women in the two lowest quintiles and the fourth quintile of the wealth index (27-28 percent), is higher among women in the middle quintile (31 percent), and is the lowest among women in the highest quintile.

Because both unmet and met need have remained unchanged since 1995, the overall percentage of demand satisfied has not changed. Less than one-fourth of the total demand for family planning is being satisfied (see next-to-last column in Table 7.3). Demand is least likely to be satisfied among younger women (under age 25), and those who live in rural areas and zoba Gash-Barka. The percentage of need satisfied has increased in zoba Anseba since 1995, but the situation has deteriorated in the other subgroups mentioned above. The total demand satisfied is positively correlated with education and the wealth index. The percentage of demand satisfied ranges from 12 percent for uneducated women to 48 percent for the women in the highest education category. Similarly, for the wealth index, the demand satisfied increases steadily to 50 percent for women in the highest quintile.

7.4 IDEAL FAMILY SIZE

The discussion of fertility preferences earlier in this chapter focused on the respondent's wishes for the future. The number of children she already has clearly influences a woman's preferences. As in the 1995 EDHS, the 2002 EDHS attempted to obtain a measure that is less dependent on a woman's current family size—the ideal family size (ideal number of children). Information on what a woman considers the ideal family size was elicited by asking respondents who had no children: "If you could choose exactly the number of children to have in your whole life, how many would that be?" Respondents with children were asked: "If you could go back to the time you did not have any children and choose exactly the number of children to have in your whole life, how many would that be?" The question about ideal family size requires a woman to perform the difficult task of considering the desired family size regardless of the number of children that she already has. As Table 7.4 shows, one in eight respondents in Eritrea gave a non-numeric response, most of them saying that "it is up to God." The proportion of women giving non-numeric responses increases with the woman's family size, from one in eleven women with one child to one in four women with seven or more children. This is because the more children a woman has, the more likely she is to be older (see Table 4.4) and uneducated (see Table 3.2); and such women are less likely to have formed specific ideas about desired family size.

Table 7.4 indicates that Eritrean women desire large families; overall, only one in ten women wants less than four children. A four-child family is the modal response (21 percent). Almost one-third of women want five or six children, one-sixth want 7-9 children, and one in ten want 10 or more children. Women in Eritrea, regardless of their present family size, desire large families. More than one in ten women with four children, two in ten women with five or six children, and one-fourth of women with

Table 7.4 Ideal number of children

Percent distribution of all women by ideal number of children, and mean ideal number of children for all women and for currently married women, according to number of living children, Eritrea 2002

	Number of living children								
Ideal number of children	0	1	2	3	4	5	6	7+	Total
0	2.5	1.3	1.2	1.3	1.3	0.9	1.4	2.0	1.7
1	0.5	0.2	0.3	0.3	0.0	0.0	0.0	0.0	0.3
2	4.7	1.9	2.6	1.2	0.4	0.2	1.2	0.0	2.4
3	9.4	8.7	3.4	3.5	1.2	1.1	1.0	0.9	5.4
4	31.9	27.7	22.1	16.3	14.8	5.8	5.9	3.5	21.3
5	16.8	17.9	16.7	15.4	9.4	7.2	5.4	5.0	13.9
6	15.3	15.0	18.7	24.0	22.6	17.4	18.9	11.6	17.4
7	3.2	4.5	4.8	8.2	12.4	11.2	7.0	6.9	6.1
8	4.2	5.4	6.4	7.2	11.4	18.3	15.2	15.2	8.1
9	0.4	0.6	0.8	0.8	0.9	3.4	4.7	4.9	1.4
10+	5.0	7.4	8.2	8.8	11.1	15.1	21.0	26.0	10.0
Non-numeric responses	6.0	9.5	14.7	13.0	14.5	19.4	18.4	23.9	12.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	2,874	1,218	1,070	1,034	794	603	480	682	8,754
Mean ideal number of children for:									
All women	4.9	5.3	5.6	5.9	6.4	7.2	7.5	8.1	5.8
Number	2,700	1,102	912	900	679	486	392	519	7,689
Currently married women	5.7	5.5	5.8	6.0	6.5	7.3	7.6	8.0	6.3
Number	670	835	758	752	599	434	357	491	4,895

seven or more children consider 10 or more children the ideal family size. It should be noted that all percentages referring to the ideal family size in Table 7.4 would have been higher if they were based on all women and not just those who gave numeric responses. If it were assumed that the women who gave non-numeric responses want all the children God gives them, then half of women who have seven or more children would have an ideal family size of 10 or more children.

Table 7.4 also shows the mean ideal number of children for all women and currently married women by current family size. These means exclude women who gave non-numeric responses. The mean ideal number of children for all women is 5.8 and for currently married women 6.3. The mean ideal family size increases with the number of living of children, from 5.3 for women with one child to 8.1 for women with seven or more children. The lower mean ideal family size for all women than for currently married women is more noticeable before women start childbearing. All childless women want fewer than five children, or 0.8 children less than currently married childless women. However, these women may have more children than they currently want if they do not do something to avoid having unwanted children.

Table 7.5 presents the mean ideal number of children for all women by age and background characteristics. There is a direct relationship between age and ideal number of children. The mean ideal number of children increases from 4.8 for women age 15-19 to 5.6 for women age 25-29, and 7.2 for women age 45-49. The mean ideal number of children among rural women is much higher than that among their urban counterparts (6.4 and 5.0, respectively). Women in zobas Semenawi Keih Bahri and Anseba (6.5-6.6) have much higher mean ideal family sizes than women in zoba Maekel (4.9). The mean ideal family size is negatively related to both education and the wealth index. For example, the women in the lowest quintile of the wealth index want 7.0 children, whereas the women in the highest quintile have a mean ideal family size of 4.7. The differentials in the mean ideal family size hold across all age groups for all background characteristics shown in Table 7.5.

Table 7.5 Mean ideal number of children by background characteristics

Mean ideal number of children for all women, by age and background characteristics, Eritrea 2002

Background characteristic	Current age of woman							Total
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Residence								
Total urban	4.3	4.8	5.0	5.3	5.4	6.2	6.3	5.0
Asmara	4.0	4.6	4.7	4.6	4.9	5.8	5.5	4.7
Other towns	4.6	4.9	5.3	5.9	5.9	6.6	7.1	5.4
Rural	5.3	5.9	6.3	6.9	7.3	7.5	7.8	6.4
Zoba								
Debubawi Keih Bahri	4.6	5.2	5.4	6.1	6.7	6.4	6.8	5.7
Maekel	4.2	4.7	4.8	5.0	5.2	5.9	5.7	4.9
Semenawi Keih Bahri	5.3	5.9	6.4	6.7	7.4	7.6	8.1	6.6
Anseba	5.4	5.9	6.4	7.2	7.0	7.6	7.9	6.5
Gash-Barka	5.0	5.6	6.3	7.0	6.8	7.6	7.5	6.2
Debub	5.0	5.3	5.5	6.0	6.5	6.8	7.4	5.7
Education								
No education	5.7	5.9	6.5	6.8	7.2	7.4	7.5	6.7
Primary	5.0	5.5	5.5	5.9	5.7	6.4	6.2	5.5
Middle	4.7	4.9	4.9	(5.5)	(5.0)	*	*	4.9
Secondary +	4.3	4.6	4.6	4.5	4.7	5.0	*	4.5
Wealth index								
Lowest	5.7	6.2	6.8	7.7	7.7	7.9	8.3	7.0
Second	5.1	6.0	6.6	6.8	7.4	7.2	8.0	6.4
Middle	5.1	5.8	6.0	6.4	7.0	7.4	7.2	6.1
Fourth	4.8	5.1	5.2	5.7	5.8	6.8	6.6	5.4
Highest	4.1	4.6	4.8	4.9	5.1	5.5	5.9	4.7
Total	4.8	5.3	5.6	6.2	6.4	6.9	7.2	5.8

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

7.5 IDEAL FAMILY SIZE, UNMET NEED, AND STATUS OF WOMEN

An increase in women's empowerment is recognized as important for efforts to reduce fertility through at least two main pathways: its negative association with desired family size and its positive association with women's ability to meet their own family-size goals through the effective use of contraception. Table 7.6 shows how women's ideal family size and unmet need for family planning vary according to two indicators of women's empowerment. The first indicator is the number of decisions in which the respondent has the final say, by herself or jointly with someone (for list of decisions see Table 3.15); and ranges in value from 0 to 6. The indicator is positively related to women's empowerment and reflects the degree of control women are able to exercise in areas that affect their life and environment. The second indicator, which ranges in value from 0 to 5, is the number of specified situations in which the respondent feels a husband would be justified in beating his wife (see Table 3.16 for the list of reasons). A lower score on this indicator is interpreted to reflect a greater sense of entitlement, self-esteem, and status.

Contrary to expectation, the mean ideal number of children is lowest (5.9) for women who have no say in any of the six decisions. However, among other women, the mean ideal number of children

Table 7.6 Ideal number of children and unmet need by women's status

Mean ideal number of children and unmet need for spacing and limiting among currently married women, by women's status indicators, Eritrea 2002

Women's status indicator	Mean ideal number of children[1]	Number of women	Unmet need for family planning[2]			Number of women
			For spacing	For limiting	Total	
Number of decisions in which woman has final say[3]						
0	5.9	142	33.5	2.4	35.9	189
1-2	6.7	1,057	25.0	4.9	29.9	1,240
3-4	6.5	1,291	21.3	6.9	28.2	1,485
5-6	6.1	2,405	18.3	6.3	24.6	2,819
Number of reasons wife beating is justified						
0	6.0	1,355	18.9	5.3	24.1	1,543
1-2	6.2	1,136	23.2	6.3	29.4	1,337
3-4	6.6	1,489	21.5	5.9	27.5	1,722
5	6.5	915	20.7	6.8	27.5	1,132
Total	6.3	4,895	21.0	6.0	27.0	5,733

[1] Means are calculated excluding the women giving non-numeric responses.
[2] See Table 7.3 for definition of unmet need for family planning
[3] Herself or jointly with others

decreases from 6.7 for women with a final say in 1-2 decisions to 6.1 for women with a final say in 5-6 decisions.

The relationship between the mean ideal number of children and the number of reasons for which women consider wife beating justified shows the expected pattern. The mean ideal number of children is lower for women who believe that wife beating is not justified for any of the specified reasons than for women who agree with three or more reasons.

Overall, women's autonomy in terms of their final say, alone or jointly, in decisionmaking is negatively related to the total unmet need for family planning. Total unmet need and unmet need for spacing decrease as women's autonomy increases, while unmet need for limiting increases as the decisionmaking power of women increases. Total unmet need and the number of reasons for which women consider wife beating justified show no consistent relationship. However, each type of unmet need is lowest among women who consider wife beating unjustified for any reason.

7.6 FERTILITY PLANNING

Several indicators of the level of unwanted fertility can be derived from the 2002 EDHS data. First, responses to a question about the planning status of recent births and any current pregnancies—that is, whether a birth or pregnancy was *planned* (wanted then), *mistimed* (wanted later), or *unwanted (*not wanted at all)—provide an indication of the extent of unplanned fertility. In interpreting these data, however, it is important to remember that women may rationalize mistimed and unwanted pregnancies, declaring them as wanted after the children are born.

Table 7.7 shows the percent distribution of births in the five years preceding the survey and current pregnancies by fertility planning status. Three-fourths of births in the five-year period were

Table 7.7 Fertility planning status

Percent distribution of births in the five years preceding the survey (including current pregnancies) by fertility planning status, according to birth order, mother's age at birth, and wealth index, Eritrea 2002

Birth order, mother's age at birth, and weight index	Planning status of birth					
	Wanted then	Wanted later	Wanted no more	Missing	Total	Number of births
Birth order						
1	77.4	16.6	5.1	0.9	100.0	1,295
2	76.7	20.6	1.9	0.8	100.0	1,240
3	76.0	20.7	2.2	1.1	100.0	1,118
4	75.9	19.9	4.1	0.1	100.0	839
5	73.5	20.8	4.7	1.1	100.0	691
6	73.3	21.0	4.9	0.8	100.0	594
7+	63.2	18.8	17.2	0.9	100.0	1,151
Mother's age at birth						
<20	66.0	27.8	5.1	1.0	100.0	845
20-24	76.6	19.9	2.6	0.9	100.0	1,613
25-29	78.7	17.7	3.0	0.6	100.0	1,713
30-34	75.2	18.3	5.5	1.0	100.0	1,207
35-39	70.6	18.9	10.0	0.6	100.0	1,056
40-44	66.7	15.1	17.1	1.1	100.0	394
45-49	54.9	14.3	30.7	0.0	100.0	100
Wealth index						
Lowest	77.2	16.3	5.9	0.6	100.0	1,495
Second	76.0	18.5	4.7	0.7	100.0	1,470
Middle	71.2	21.9	6.1	0.8	100.0	1,447
Fourth	69.5	22.1	7.2	1.1	100.0	1,392
Highest	74.9	18.8	5.5	0.8	100.0	1,123
Total 2002	**73.8**	**19.5**	**5.9**	**0.8**	**100.0**	**6,928**
Total 1995	80.8	13.5	4.9	0.7	100.0	3,047

wanted when they occurred (planned) and one-fourth were not planned; 6 percent were unwanted, while 20 percent were mistimed (wanted later). The proportion of mistimed births has increased from 14 percent in 1995 to 20 percent in 2002, while the proportion of unwanted births has increased only slightly (from 5 to 6 percent).

According to Table 7.7, around one in four births of orders 1-6 (22-26 percent) were not planned, compared with more than one-third (36 percent) of higher-order births. Of the unplanned births, three-fourths of first-order births were mistimed but higher-order births were as likely to be unwanted as mistimed. Births to women age 20-34 were less likely to be unplanned than births to younger women (under age 20) or older women (age 35 and above). Births to women under age 35 were more likely to be mistimed than unwanted. The proportion of unwanted births increases after age 34—because these women have larger families—from 10 percent for women age 30-34 to 31 percent for women age 45-49. By wealth index, mistimed births increase from 16 percent for women in the lowest quintile to 22 percent for women in the middle and fourth quintiles.

A second approach to measuring unwanted fertility is to calculate *wanted fertility rates*. The wanted fertility rate is computed in the same way as the total fertility rate, except that unwanted births are

excluded from the numerator. In this case, unwanted births are those that exceed the number mentioned as ideal by the respondent. This rate represents the level of fertility that would have prevailed in the three years preceding the survey if all unwanted births had been avoided. A comparison of the total wanted fertility rate and the total fertility rate suggests the potential demographic impact of the elimination of unwanted births.

The total wanted fertility rate for Eritrea is 4.4, roughly one-half child less than the total fertility rate (Table 7.8). Stated another way, the total wanted fertility rate is 92 percent of the observed total fertility rate. The differences between total fertility rates and total wanted fertility rates are small for all subgroups in Table 7.8. The total wanted fertility rate declined substantially between the two surveys, from 5.7 in 1995 to 4.4 in 2002.

Table 7.8 Wanted fertility rates

Total wanted fertility rates and total fertility rates for the three years preceding the survey, by background characteristics, Eritrea 2002

	2002 EDHS		1995 EDHS
Background characteristic	Total wanted fertility rate	Total fertility rate	Total wanted fertility rate
Residence			
Total urban	3.1	3.5	3.8
Asmara	2.8	3.0	3.2
Other towns	3.5	4.0	4.8
Rural	5.3	5.7	6.5
Zoba			
Debubawi Keih Bahri	3.5	3.9	*
Maekel	3.1	3.4	3.9
Semenawi Keih Bahri	4.3	4.5	(6.4)
Anseba	5.1	5.6	5.1
Gash-Barka	4.6	5.1	5.1
Debub	5.2	5.7	7.5
Education			
No education	5.1	5.5	6.4
Primary	4.0	4.4	u
Middle	3.6	3.8	u
Secondary +	2.9	3.1	(2.6)
Total	4.4	4.8	5.7

Note: Rates are based on births to women age 15-49 in the period 1-36 months preceding the survey. The total fertility rates are the same as those presented in Table 4.2. Figures in parentheses are based on 250-499 woman-years of exposure. An asterisk indicates that a figure is based on fewer than 250 women-years of exposure and has been suppressed.
u = Unknown (not available)

7.7 ATTITUDES TOWARD UNPLANNED PREGNANCY

In the preceding section, the success in fertility planning in the past was measured by classifying births into three categories: planned, mistimed, and unwanted. This section examines the attitudes of women toward a possible unplanned pregnancy in the near future. Women who are using contraception or are pregnant are considered not at risk of pregnancy. This is also true for women who want to have a child soon (within two years). Currently married women who want to space births (wait at least two years for the next birth) as well as those who want no more children and who are not using any family planning method are at risk of an unplanned pregnancy. Women at risk of unplanned pregnancy were asked: "In the next few weeks, if you discovered that you were pregnant, would that be a big problem, a small problem, or no problem for you?" The response to the question reflects the seriousness of a woman's future fertility intentions and the level of distress associated with a deviation from the stated intention. In Table 7.9, the responses are summarized in Table 7.9 separately for those who want to space births and those who want to limit births.

The left panel of Table 7.9 shows the responses of women who want no more children but are not using contraception. Almost nine in ten women said that getting pregnant in the next few weeks would be a problem; including 78 percent who termed the problem "a big problem." Women under age 30 are more likely than older women to consider an unwanted pregnancy in the near future a big problem. The level of distress of an unplanned future pregnancy is most often positively related to the number of living children. For example, 72 percent of women with 0-2 children think that an unwanted pregnancy would be a big problem, compared with 79 percent of women with five or more children. However, the proportion of women who say that an unwanted pregnancy would not be a problem does not differ by number of living children. The differences in planning status are largest for the most recent birth. Women with no birth in the past five years are less likely to say that an unwanted pregnancy would be a big problem than women who have already had a mistimed or unwanted birth. Eighty-six percent of women whose last birth was wanted later and almost all (97 percent) women whose last birth was unwanted, said that an unplanned pregnancy would be a big problem. There is no clear pattern by wealth index.

For women who want to space their next birth but are not using a family planning method (the right panel of Table 7.9), the level of distress associated with an unplanned pregnancy is not as high as among women who want no more children. Sixty-three percent of women who wanted to space their next birth consider an unplanned pregnancy a big problem, 15 percent consider it a small problem, and 22 percent regard it as no problem. The percentage of women who say that an unplanned pregnancy would be a problem shows an inverted U-shaped pattern by age and by current family size. Women who had no births in the last five years are least likely to consider an unplanned pregnancy in the near future a big problem; more than two-thirds mentioned that an unplanned pregnancy is either a small problem (13 percent) or no problem (54 percent). The proportion of women saying that a pregnancy in the near future would be no problem increases with increasing education and wealth. Rural women who want to space their next birth are more likely to say that a pregnancy in the near future would be a problem (81 percent) than their urban counterparts: Total urban (67 percent) and Asmara (58 percent). These results clearly suggest a greater need to provide family planning education and services to rural women who want to space and who are currently not using a contraceptive method.

Table 7.9 Attitudes of nonusers toward mistimed and unwanted pregnancies

Percent distribution of currently married women exposed to pregnancy who want no more children or want to wait two or more years for the next child by the perceived problem if they got pregnant in the next few weeks and by fertility preferences, according to background characteristics, Eritrea 2002

Background characteristic	Attitude toward becoming pregnant among nonusers who want to limit						Attitude toward becoming pregnant among nonusers who want to space					
	Big problem	Small problem	No problem	Missing	Total	Number of women	Big problem	Small problem	No problem	Missing	Total	Number of women
Age												
15-19	*	*	*	*	100.0	11	59.4	13.8	26.0	0.9	100.0	243
20-29	89.2	3.4	5.9	1.4	100.0	67	66.3	14.4	18.4	0.9	100.0	719
30-49	76.1	10.3	11.9	1.7	100.0	640	58.9	15.3	23.8	2.0	100.0	543
Residence												
Total urban	77.5	7.6	12.4	2.4	100.0	270	54.9	12.0	30.5	2.6	100.0	417
Asmara	76.2	7.0	12.5	4.3	100.0	121	48.6	8.9	39.6	3.0	100.0	185
Other towns	78.6	8.1	12.4	0.9	100.0	150	60.0	14.5	23.3	2.2	100.0	232
Rural	77.6	10.7	10.7	1.1	100.0	448	65.4	15.6	18.2	0.8	100.0	1,088
Education												
No education	78.2	9.9	10.7	1.2	100.0	520	63.2	16.7	18.4	1.6	100.0	890
Primary	81.8	10.2	8.0	0.0	100.0	94	66.4	11.3	22.0	0.4	100.0	305
Middle	(76.8)	(0.0)	(23.2)	(0.0)	100.0	38	61.6	13.9	24.5	0.0	100.0	137
Secondary +	(66.7)	(10.9)	(14.2)	(8.2)	100.0	65	52.6	10.2	34.7	2.5	100.0	173
Number of living children												
0-2	71.9	9.6	12.8	5.8	100.0	58	58.1	14.8	26.1	0.9	100.0	775
3-4	76.1	7.9	12.5	3.6	100.0	142	71.4	12.9	14.3	1.5	100.0	472
5+	78.6	10.0	10.8	0.6	100.0	518	59.5	17.3	21.2	2.0	100.0	257
Fertility planning status (last 5 years)												
No birth	62.9	16.0	18.2	2.9	100.0	250	31.5	13.3	53.5	1.6	100.0	211
Wanted then	79.7	10.0	10.3	0.0	100.0	244	65.0	16.7	17.1	1.3	100.0	970
Wanted later	85.8	3.2	7.9	3.1	100.0	109	73.7	10.2	15.4	0.7	100.0	290
Wanted no more	97.3	0.4	1.4	0.9	100.0	111	(93.1)	(2.0)	(3.6)	(1.3)	100.0	31
Wealth index												
Lowest	80.3	12.0	6.0	1.7	100.0	172	61.6	20.6	17.4	0.4	100.0	295
Second	78.4	8.4	13.1	0.0	100.0	134	66.6	16.6	16.1	0.7	100.0	348
Middle	77.7	9.1	13.2	0.0	100.0	130	64.4	13.7	20.5	1.4	100.0	377
Fourth	83.8	4.8	8.3	3.1	100.0	133	61.9	11.6	25.1	1.5	100.0	284
Highest	67.9	12.2	16.9	3.0	100.0	149	54.1	8.3	34.3	3.3	100.0	200
Total	77.5	9.5	11.3	1.6	100.0	718	62.5	14.6	21.6	1.3	100.0	1,505

Note: Exposed women are those currently married and fecund who are not using contraception and who are not pregnant. Total includes 3 women with missing information on fertility status of last birth in the five years preceding the survey, who are not shown separately. Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates a figure is based on fewer than 25 unweighted cases and has been suppressed.

INFANT AND CHILD MORTALITY 8

The information presented in this chapter is important not only for the demographic assessment of the country's population, but also in the design and evaluation of health policies and programs. Furthermore, information on infant and child mortality is important for the improvement of child survival programs and for identifying the most vulnerable subgroups of children. The reduction of infant and child mortality and the incidence of high-risk pregnancies remain priority targets of the National Health Policy (MOH, 1998).

This chapter presents information on levels, trends, and differentials in mortality among children under five years of age in Eritrea. The chapter also examines variations in mortality levels according to certain demographic and socioeconomic characteristics that have been shown to influence infant and child mortality (e.g., rural residence, young maternal age at birth, and short birth intervals). The mortality levels from the 2002 EDHS are central to the assessment of the current demographic situation in Eritrea. Mortality levels are also one of the main indicators of the standard of living or development of a population. Thus, identifying segments of the child population that are at greater risk of dying contributes to efforts directed at improving child survival and lowering the exposure of young children to risk.

8.1 ASSESSMENT OF DATA QUALITY

The 2002 EDHS mortality estimates are calculated from information that was collected in the birth history section of the Women's Questionnaire. The birth history section begins with questions about the respondent's experience with childbearing (i.e., the number of sons and daughters living with the mother, the number who live elsewhere, and the number who have died). These questions were followed by a retrospective birth history in which each respondent was asked to list each of her births, starting with the first birth. For each birth, data were obtained on sex, month and year of birth, survivorship status, and current age, or if the child was dead, age at death. This information is used to directly estimate mortality rates.

In this chapter, the following rates are used to assess and measure infant and child mortality:

- **Neonatal mortality:** the probability of dying within the first month of life;
- **Postneonatal mortality:** the difference between infant and neonatal mortality;
- **Infant mortality:** the probability of dying during the first year of life;
- **Child mortality:** the probability of dying between the first and fifth birthday;
- **Under-five mortality:** the probability of dying before the fifth birthday.

All rates are expressed as deaths per 1,000 live births, except the child mortality rate, which is expressed as deaths per 1,000 children surviving to the first birthday.

The reliability of mortality estimates from surveys such as the 2002 EDHS that derive estimates from retrospective birth histories is affected by a number of factors. These factors include the completeness with which deaths of children are reported, and the extent to which birth dates and ages at death are accurately reported. Omission of either births or deaths is the most serious problem because it

directly affects mortality estimates. When selective omission of childhood deaths occurs, it is usually more severe for deaths occurring early in infancy. Errors in reporting of birth dates may cause a distortion of trends over time, while errors in reporting of age at death can distort the age pattern of mortality.

One way such omissions can be detected is by examining the proportion of neonatal deaths and infant deaths. Generally, if there is substantial underreporting of deaths, the result is an abnormally low ratio of neonatal deaths to infant deaths and deaths under seven days to all neonatal deaths. Since underreporting of deaths is likely to be more common for births that occurred a long time before the survey, it is important to explore whether these ratios change markedly over time. The extent to which such errors in survey data manifested themselves in the 2002 EDHS is examined below.

Results from Appendix Table C.5 suggest that early infant deaths have not been seriously underreported in Eritrea because the ratios of deaths under seven days to all neonatal deaths are quite high. Seventy-four percent of the neonatal births in the five years prior to the 2002 EDHS were early neonatal births (a ratio of less than 25 percent is generally consider to indicate underreporting of early neonatal deaths). However, the fact that the ratios show declines from 74 and 73 in the periods 0-4 and 5-9 years before the survey to 62 and 64 in the periods 10-14 and 15-19 years preceding the survey, respectively, suggests that there is some underreporting of births that occurred more than 20 years preceding the 2002 survey. Similar patterns of declining ratios were observed in the relevant periods in the 1995 EDHS. Generally, a higher proportion of early neonatal deaths was observed in the 2002 EDHS than in the 1995 EDHS. Inspection of the ratios shown in Appendix Tables C.5 and C.6 indicates that there was no selective underreporting of early neonatal deaths in the 2002 EDHS for two reasons. First, the proportion of early neonatal deaths is high for the two most recent five-year periods. Second, the proportion of infant deaths is plausible (see Appendix Table C.6).

Another factor that affects childhood mortality estimates is the quality of reporting of age at death. In general, these problems are less serious for periods in the recent past than for those in the more distant past. If age at death is misreported, it will bias the estimates, especially if the net effect of the age misreporting results in transference of deaths from one age bracket to another. For example, a net transfer of deaths from under one month to a higher age, will affect the estimates of neonatal and postneonatal mortality. To minimize errors in the reporting of age at death, interviewers were instructed to record age at death in days if the death took place in the month following the birth, in months if the child died before age two, and in years if the child was two years or older. Table C.5 shows age heaping at ages 7 and 14 days, which is a sign of approximation of age to one and two weeks, respectively. Although age heaping at 14 days may not bias any indicator, the heaping at 7 days is likely to lead to a lower estimate of early neonatal mortality. Appendix Table C.6 shows some evidence of heaping at age 12 months (an approximation of age to one year). However, age heaping is higher for births in the three preceding five-year periods (5-9, 10-14, and 15-19 years prior to survey) than for births in the most recent period (0-4 years before the survey). The reporting of deaths in the five years preceding the survey shows some heaping but does not show substantial heaping, and it is therefore not necessary to adjust the data used to estimate mortality levels.

8.2 EARLY CHILDHOOD MORTALITY RATES: LEVELS AND TRENDS

Early childhood mortality rates for the 15 years preceding the survey are presented by five-year periods in Table 8.1. For the most recent period (i.e., 0-4 years before the survey, which corresponds roughly to the period 1997-2001), the infant mortality rate is 48 deaths per 1,000 live births. This means that one in every 21 babies born in Eritrea does not live to the first birthday. Of those who survive to their first birthday, another 48 out of 1,000 die before reaching their fifth birthday. The overall under-five mortality is estimated at 93 deaths per 1,000 live births, which implies that one in every 11 Eritrean babies does not survive to his or her fifth birthday.

Table 8.1 Early childhood mortality rates

Neonatal, postneonatal, infant, child, and under-five mortality rates for five-year periods preceding the survey, Eritrea 2002

Years preceding the survey	Approximate calendar years	Neonatal mortality rate (NN)	Postneonatal mortality rate[1] (PNN)	**Infant mortality rate ($_1q_0$)**	Child mortality rate ($_4q_1$)	**Under-five mortality rate ($_5q_0$)**
0-4	1997-2001	24	24	48	48	93
5-9	1992-1996	35	32	67	58	121
10-14	1987-1991	28	45	73	81	148

[1] Computed as the difference between the infant and the neonatal mortality rates

In the first year of life, the first month is the hardest to survive. The neonatal and postneonatal rates are the same, 24 deaths per 1,000 live births, indicating that the same number of children die in the first month of life as in the subsequent 11 months. Although, theoretically, the postneonatal period should exhibit a lower risk of death than the neonatal period.

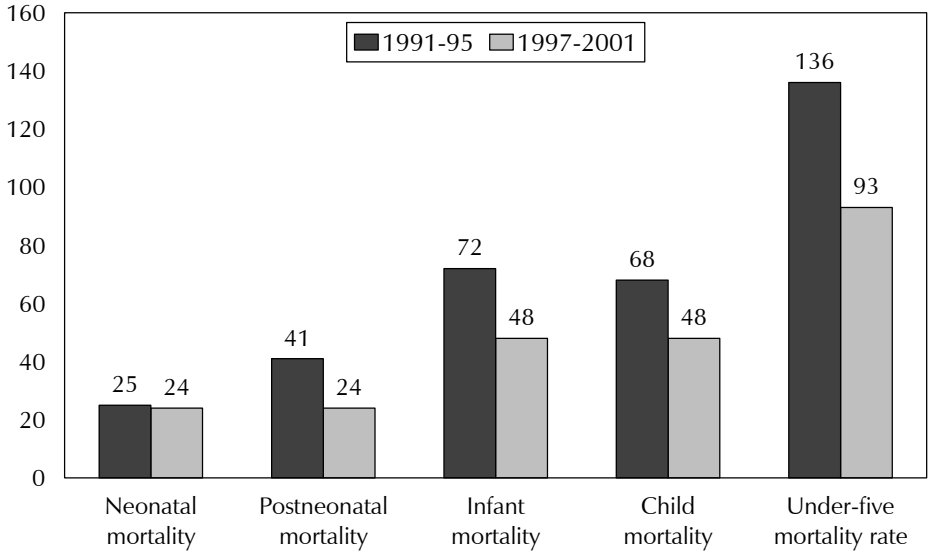
Table 8.1 show that although infant mortality in Eritrea was high in the past, it has declined substantially. Between the two most recent five-year periods, there was a decline in infant mortality of 19 percentage points, and during the previous two five-year periods there was a decline of 6 percentage points. Under-five mortality has declined 28 percentage points between the most recent five-year periods, and there was about the same amount of decline during the earlier two periods.

Another way of examining trends in mortality is by comparing the 2002 EDHS results with findings from other sources, such as the 1995 EDHS, in which data were collected using the same techniques and estimates were calculated using the same methodology. Comparison of estimates of infant mortality from the 2002 EDHS and adjusted estimates from the 1995 EDHS shows that mortality in Eritrea has declined by 33 percent during the period (from 72 to 48 deaths per 1,000), an annual decline of 5 percent (Figure 8.1). This decline is mainly accounted for by a drop in postneonatal mortality from 41 deaths per 1,000 in the five years before the 1995 survey to 24 deaths per 1,000 in 2002. In the same period, child mortality and under-five mortality declined from 68 and 136 deaths per 1,000 to 48 and 93 deaths per 1,000, respectively. The declines in child mortality and under-five mortality are close to 5 percent per year. These figures suggest that early childhood mortality in Eritrea declined substantially between the two surveys. The main reasons for this decline were the concerted efforts of health providers and the Expanded Program on Immunization (EPI) in the design and successful implementation of health programs such as antenatal care and treatment of childhood diseases (see Chapter 9).

8.3 DIFFERENTIALS IN MORTALITY

Differentials in early childhood mortality indicators are presented in Tables 8.2 and 8.3. For all but one variable, mortality estimates are calculated for a ten-year period before the survey (approximately 1992-2001), so that the rates are based on a sufficient number of cases in each subgroup to ensure adequate statistical precision of estimates. Five-year rates are presented for size of child at birth in Table 8.3 because information for this indicator was collected only for births since January 1997.

Figure 8.1
Trends in Childhood Mortality



Note: Infant mortality and child mortality rates for 1991-95 are adjusted rates. EDHS 1995 and EDHS 2002

Socioeconomic Differentials

Table 8.2 and Figure 8.2 show the early childhood mortality rates in Eritrea by socioeconomic characteristics. Mortality levels for all indicators in urban areas are consistently lower than those in rural areas. For example, under-five mortality in urban areas is 26 percent lower than in rural areas.

The 2002 EDHS results show wide regional differences in mortality in Eritrea. Infant mortality ranges from a low of 37 deaths per 1,000 live births in zoba Anseba to a high of 122 deaths per 1,000 in zoba Debubawi Keih Bahri. For under-five mortality, only zobas Maekel and Anseba have rates under 74 deaths per 1,000, whereas other zobas have substantially higher mortality, ranging from 111 deaths per 1,000 in zoba Debub to 187 deaths per 1,000 in zoba Debubawi Keih Bahri. Children in the two Red Sea zobas are at especially high risk of dying in early childhood.

Generally, a mother's level of education is inversely related to her child's risk of dying. Although the relationship is not linear, children born to mothers with no education suffer the highest mortality at all ages. Data in Table 8.2 indicate that the effect of mother's education is greater on child mortality and under-five mortality than on neonatal, postneonatal, and infant mortality. The infant mortality rate for children whose mothers have a primary education is 25 percent lower than that of children whose mothers have no education. The gap between children of mothers with at least a secondary education and children of mothers with no education is 36 percent. The corresponding figure for child mortality is 70 percent, and for under-five mortality, 51 percent. The gaps in neonatal and postneonatal mortality rates between infants whose mothers have some secondary education and infants whose mothers have no education are 36 percent and 35 percent, respectively.

This pattern of mortality differentials is not unexpected and is due to the fact that the causes of neonatal mortality are more biological in nature and less influenced by socioeconomic factors; the causes of child mortality and under-five mortality are more likely to be nonbiological factors.

The last panel in Table 8.2 shows that early childhood mortality has an inverted U-shaped relationship with the wealth index; the middle quintile has the highest mortality rates. However, at all

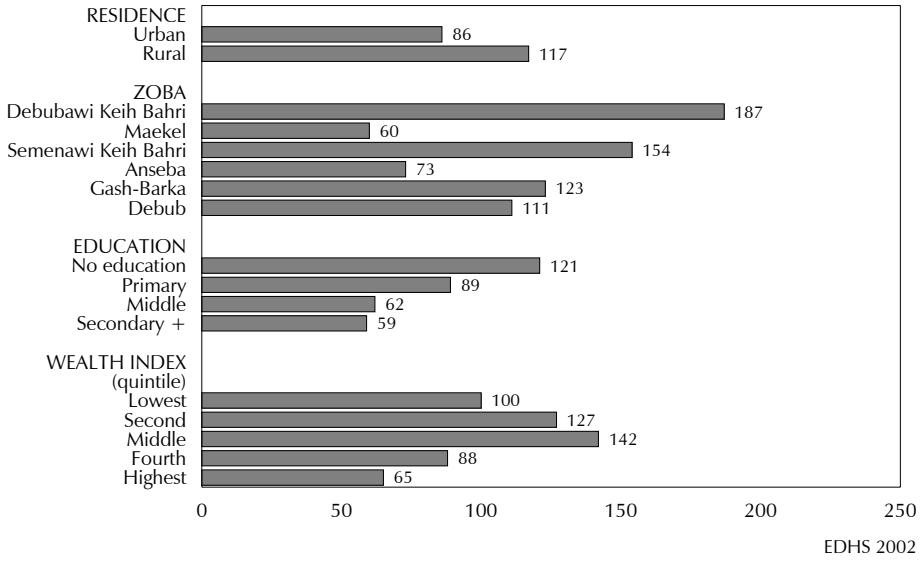
Table 8.2 Early childhood mortality rates by socioeconomic characteristics

Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey, by background characteristics, Eritrea 2002

Background characteristic	Neonatal mortality rate (NN)	Postneonatal mortality rate[1] (PNN)	**Infant mortality rate ($_1q_0$)**	Child mortality rate ($_4q_1$)	**Under-five mortality rate ($_5q_0$)**
Residence					
Urban	23	26	48	40	86
Rural	33	29	62	59	117
Zoba					
Debubawi Keih Bahri	55	67	122	74	187
Maekel	19	20	39	22	60
Semenawi Keih Bahri	39	38	77	83	154
Anseba	20	16	37	37	73
Gash-Barka	41	25	66	61	123
Debub	27	31	58	56	111
Mother's education					
No education	33	31	64	60	121
Primary	25	23	48	44	89
Middle	15	19	34	(29)	(62)
Secondary +	21	20	41	18	59
Wealth index					
Lowest	24	24	48	54	100
Second	40	29	68	64	127
Middle	43	38	81	66	142
Fourth	20	26	47	43	88
Highest	18	20	38	28	65

Note: Figures in parentheses are based on 250-499 unweighted cases.
[1] Computed as the difference between the infant and the neonatal mortality rates

Figure 8.2
Under-five Mortality by Background Characterstics



ages, the children in the fourth and highest quintiles have lower mortality rates than the two lowest quintiles.

For socioeconomic characteristics for which comparisons can be made between the 1995 EDHS and the 2002 EDHS, there is a marked decline in all mortality indicators.

Demographic Differentials

The demographic characteristics of both mother and child have been found to play an important role in the survival probability of children. Table 8.3 presents early childhood mortality rates by demographic characteristics (sex of child, mother's age at birth, birth order, previous birth interval, and birth size).

Table 8.3 Early childhood mortality rates by demographic characteristics

Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey, by demographic characteristics, Eritrea 2002

Demographic characteristic	Neonatal mortality rate (NN)	Postneonatal mortality rate[1] (PNN)	**Infant mortality rate ($_1q_0$)**	Child mortality rate ($_4q_1$)	**Under-five mortality rate ($_5q_0$)**
Child's sex					
Male	36	28	64	55	116
Female	23	28	50	50	98
Mother's age at birth					
<20	42	31	73	56	125
20-29	27	26	53	48	99
30-39	28	30	58	57	111
40-49	32	29	61	(55)	(113)
Birth order					
1	42	27	69	49	115
2-3	25	24	49	45	91
4-6	23	28	52	60	109
7+	38	38	75	57	129
Previous birth interval[2]					
<2	43	49	92	75	160
2 years	21	22	43	44	85
3 years	16	19	34	39	72
4+ years	18	16	33	47	78
Birth size[3]					
Small or very small	24	25	49	*	*
Average or larger	21	23	44	(34)	(76)

Note: Figures in parentheses are based on 250-499 unweighted cases. An asterisk indicates that a figure is based on fewer than 250 unweighted cases and has been suppressed.
[1] Computed as the difference between the infant and the neonatal mortality rates
[2] Excludes first-order births
[3] Based on the five-year period before the survey

In Eritrea, during the postneonatal period, both sexes have an equal chance of dying (28 deaths per 1,000 live births), but for all other early childhood mortality indicators the levels are consistently higher for male children than for female children. Neonatal mortality is 57 percent higher and under-five mortality is 16 percent higher for males than females. The 1995 EDHS results showed a similar mortality pattern; the differences were slightly higher in the 1995 EDHS than in the 2002 EDHS.

Although the hypothesis "too early and too late increases child mortality" is generally upheld in the 2002 EDHS, evidence from Table 8.3 suggests that in Eritrea, too-early childbearing is more risky than too-late childbearing. The safest age for childbearing ranges from 20 to 29. Compared with a child's risk of dying before the first birthday for a child born to mothers age 20-29, having a child before age 20 increases the child's risk of dying by 38 percent; the risk of having a child at age 40-49 increases the child's risk of dying by 15 percent.

The effect of birth order operates mostly during infancy, with second- and third-order births having the lowest risk of dying in the first year of life. First-order births, on the other hand, have a 41 percent greater risk of dying (69 deaths per 1,000 births) before the first birthday than second- and third-order births. First births and seventh- and higher-order births have the highest neonatal, infant, and under-five mortality rates.

Short birth intervals are associated with increased risk of dying. Children born less than two years after a previous birth are twice as likely to die before age five as those born after an interval of at least three years. These results reinforce the need to promote child spacing mechanisms such as breastfeeding and family planning as ways of ensuring child survival.

Birth weight is a factor often associated with the child survival, particularly during the first year. Since few women in Eritrea give birth in a health facility (28 percent), there was no birth weight recorded for most children. As a measure of birth size, women were asked whether, in their judgment, the size of their baby at birth was very small, small, average, or larger than average. As expected, babies reported as small or very small at birth have higher mortality rates than those reported as average or large at birth. But the differences are small.

8.4 EARLY CHILDHOOD MORTALITY BY WOMEN'S STATUS

Women's status, as measured by their ability to control resources and make decisions, is associated with infant and child mortality levels. In the 2002 EDHS, women were asked questions related to women's autonomy (see Chapter 3). The questions included the number of household decisions in which the woman participates in the final say and the number of reasons the woman thinks wife beating is justified. A woman is considered more independent if she participates in a large number of household decisions. On the other hand, the more reasons she perceives wife beating as justified, the less independent she is.

Although there is an inverse relationship between women's status and early childhood mortality, the relationship is not necessarily linear (Table 8.4). Women's status, as measured by decisionmaking power, seems to be most strongly associated with infant mortality. Among children born to women who have no final say in any decisions, 101 per 1,000 die before the first birthday, compared with about 59 per 1,000 children born to women who participate in some decisionmaking. In Eritrea, childhood mortality levels are associated with whether or not the mother has some power to make final decisions; it does not depend on the number of decisions the mother makes.

Attitudes toward wife beating are a reflection of women's status. Women who do not approve of any form of wife beating are assumed to enjoy a higher status in the household and in society. In turn, this translates into a more favorable mortality profile for their children. Table 8.4 shows the pattern of the

relationship. Generally, children of lower-status women have higher levels of mortality. The infant mortality rate for children of mothers who consider wife beating unjustified for any reason is 51 per 1,000 compared with 72 per 1,000 for children whose mothers agree with all of the specified reasons for wife beating. A similar relationship is observed between women's status and levels of child mortality and under-five mortality.

Table 8.4 Early childhood mortality rates by women's status indicators

Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey, by women's status indicators, Eritrea 2002

Indicator of women's status	Neonatal mortality rate (NN)	Postneonatal mortality rate[1] (PNN)	**Infant mortality rate ($_1q_0$)**	Child mortality rate ($_4q_1$)	**Under-five mortality rate ($_5q_0$)**
Number of decisions in which woman has final say[2]					
0	56	45	101	(68)	(162)
1-2	33	27	59	56	112
3-4	28	26	54	53	104
5-6	28	29	57	50	104
Number of reasons wife beating is justified					
0	27	24	51	41	90
1-2	32	22	54	46	98
3-4	26	29	56	57	110
5	35	37	72	64	132

Note: Figures in parentheses are based on 250-499 unweighted cases.
[1] Computed as the difference between the infant and the neonatal mortality rates
[2] Either herself or jointly with others

8.5 HIGH-RISK FERTILITY BEHAVIOR

Research has indicated that there is a strong relationship between patterns of fertility and children's survival risks. Typically, the risk of death in early childhood increases among children born to mothers who are too young or too old, children born after too short a birth interval, and children who are of high birth order. For the purpose of this analysis, a mother is classified as "too young" if she is less than 18 years of age, and "too old" if she is over 34 years at the time of the birth. A "short birth interval" is one in which a birth occurs less than 24 months after a preceding birth; and a child is of "high birth order" if the mother has previously given birth to three or more children (i.e., the child is of birth order four or higher).

Table 8.5 shows the percent distribution of births in the five-year period before the survey and the percent distribution of currently married women by category of elevated risk. The table also examines the relative risk of dying for children by comparing the proportion dead in each specified high-risk category with the proportion dead among children not-in-any-high-risk category. First births, although often at increased risk, are in the "not-in-any-high-risk" category in this analysis because they are not considered an avoidable risk. The risk factors examined are of programmatic interest because they are avoidable at little or no cost.

Table 8.5 High-risk fertility behavior

Percent distribution of children born in the five years preceding the survey by category of elevated risk of dying and the risk ratio, and percent distribution of currently married women by category of risk if they were to conceive a child at the time of the survey, Eritrea 2002

Risk category	Births in the five years preceding the survey		Percentage of currently married women[1]
	Percentage of births	Risk ratio	
Not in any high risk category	25.0	1.00	16.6[a]
Unavoidable risk category			
First order births between ages 18 and 34 years	14.3	1.32	11.0
Single high-risk category			
Mother's age <18	4.9	2.14	2.2
Mother's age >34	2.0	0.97	4.0
Birth interval <24 months	6.3	1.67	8.4
Birth order >3	21.7	0.95	13.8
Subtotal	34.9	1.25	28.4
Multiple high-risk category			
Age <18 & birth interval <24 months[2]	0.4	*	0.2
Age >34 & birth interval <24 months	0.3	*	0.4
Age >34 & birth order >3	16.2	1.43	26.0
Age >34 & birth interval <24 months & birth order >3	3.4	4.10	7.1
Birth interval <24 months & birth order >3	5.6	2.95	10.4
Subtotal	25.9	2.11	44.0
In any avoidable high-risk category	60.8	1.61	72.4
Total	100.0	na	100.0
Number of births	6,156	na	5,733

Note: Risk ratio is the ratio of the proportion dead among births in a specific high-risk category to the proportion dead among births *not in any high-risk category*. An asterisk indicates that the figure is based on fewer than 25 unweighted cases and has been suppressed.

na = Not applicable

[1] Women are assigned to risk categories according to the status they would have at the birth of a child if they were to conceive at the time of the survey: current age less than 17 years and 3 months or older than 34 years and 2 months, latest birth occurred less than 15 months ago, or latest birth being of order 3 or higher.

[2] Includes the combined categories age<18 and birth order >3

The first column in Table 8.5 shows the percentage of births occurring in the five years before the survey that fall into various risk categories. Sixty-one percent of births in the five years preceding the survey have elevated mortality risks that are avoidable (35 percent in single high-risk categories and 26 percent in multiple high-risk categories); this is a slight decline from 65 percent in the 1995 EDHS. One-fourth of births were not in any high-risk category and 14 percent are first births to mothers age 18-34, and are considered an unavoidable risk.

Among single high-risk categories, the highest proportion of births classified as high risk are those of birth order four or higher (22 percent). The single category associated with the highest risk ratio (2.1) is mother's age under 18, followed by births occurring less than 24 months after a previous sibling (1.7). In the 1995 EDHS, for single high-risk categories, the highest risk ratios were for births that occurred after a short birth interval and births to mothers age 35 and older.

Since many births can be classified in more than one high-risk category, it makes sense for programmatic purposes to focus on births in the multiple high-risk categories. Among multiple high-risk categories, the largest proportion of births are fourth—or higher—order births to women 35 and older (16 percent). The category with the highest multiple-risk ratio (4.1) is higher-order births to older women (age 35 or older) with a short birth interval (less than 24 months). This category involves only 3 percent of births. The second highest risk ratio in the multiple high-risk category is for higher-order births after a short birth interval (3.0). This category involves 6 percent of births.

The last column of Table 8.5 shows the distribution of currently married women by category of increased risk if they were to conceive at the time of the survey. Although many women are protected from conception due to use of family planning, postpartum insusceptibility, and prolonged abstinence, in this analysis, only those who have been sterilized are included in the not-in-any-high-risk category. The criteria for placing women into specific risk categories have been adjusted to take into account gestation.

Overall, only 17 percent of currently married women in Eritrea are not in any high-risk category, while 72 percent have the potential of giving birth to a child at elevated risk of dying. Forty-four percent of married women are in multiple high-risk categories.

MATERNAL AND CHILD HEALTH 9

Women of childbearing age and children under 15 years constitute about 60 percent of the total population in developing countries. Thus, improving the health status of these groups means improving the health status of the majority of people. Many health problems of women are related to labor and delivery and can be prevented with appropriate antenatal, delivery, and postnatal care. Most childhood health problems are also easily preventable. For these reasons, maternal and child health care is one of the highest priorities of the Ministry of Health (MOH). Three-fourths of all MOH health facilities in the country provide mainly preventive services including antenatal and delivery care, immunizations, growth monitoring, health education, and family planning. Therefore, the findings of the 2002 EDHS will be extremely useful to the MOH and other organizations interested in health programs for planning, monitoring, and evaluating maternal and child health care in Eritrea.

The first part of this chapter is concerned with maternal health. The 2002 EDHS results are presented on pregnancy care, delivery care, pregnancy complications, and postnatal care for recent births.

The Integrated Management of Childhood Illness (IMCI) strategy combines improved management of childhood illness—preventive and curative—with aspects of nutrition. All illnesses that have an impact on child survival in Eritrea are covered in this program. The second part of this chapter focuses on findings on immunization of young children and the prevalence and treatment of three common childhood illnesses, namely, acute respiratory infections, diarrhea, and fever (or malaria).

Given the importance of malaria in many parts of Eritrea, current use of mosquito nets by pregnant women, all women 15-49, and children under five is presented in this chapter. The last section of the chapter discusses women's perception of problems in accessing health care.

9.1 PREGNANCY CARE

The 2002 EDHS collected a range of information on the type of care that Eritrean women receive during pregnancy, including components of antenatal care and tetanus toxoid vaccinations. Information on delivery care was collected for all births in the five years before the survey; however, information about antenatal care was restricted to the last birth in that period.

Antenatal Care Coverage and Provider

Antenatal care (ANC) is provided to enhance healthy motherhood through early detection of risk factors and, when necessary, timely intervention. It is important that health professionals provide antenatal care to all pregnant women. Although interviewers were instructed to record all persons a woman had consulted for care, only the provider with the highest qualifications is considered in Table 9.1. The table indicates that 71 percent of women who had a live birth in the five years before the survey had antenatal care for the most recent birth. Nurses and midwives provide antenatal care to 46 percent of mothers; doctors provide care to 24 percent. Traditional birth attendants (TBA) play a negligible role in the provision of antenatal care (less than 1 percent). Twenty-eight percent of mothers do not receive any antenatal care.

Maternal age at birth, birth order, and residence are related to use of antenatal care. Older women have lower antenatal care coverage than younger women, but the differences are small. Differences by birth orders are somewhat larger. The likelihood of receiving antenatal care and having a health

Table 9.1 Antenatal care

Percent distribution of women who had a live birth in the five years preceding the survey by antenatal care (ANC) provider during pregnancy for the most recent birth, according to background characteristics, Eritrea 2002

Background characteristic	Antenatal care provider				Missing	Total	Number of women
	Doctor	Nurse/ midwife/ auxiliary midwife	Traditional birth attendant/ other	No one			
Age at birth							
<20	26.9	45.4	0.8	26.5	0.4	100.0	510
20-34	24.4	49.2	0.6	25.1	0.7	100.0	2,675
35-49	21.1	39.5	0.4	38.3	0.8	100.0	990
Birth order							
1	31.7	45.8	0.6	21.8	0.2	100.0	761
2-3	22.8	52.6	0.5	23.3	0.8	100.0	1,411
4-5	23.8	45.0	0.8	29.7	0.7	100.0	922
6+	20.2	39.9	0.4	38.6	0.9	100.0	1,081
Residence							
Total urban	30.8	60.4	0.6	7.7	0.6	100.0	1,448
Asmara	37.3	56.1	0.2	5.7	0.7	100.0	618
Other towns	25.9	63.6	0.8	9.2	0.5	100.0	830
Rural	20.3	39.0	0.5	39.4	0.8	100.0	2,727
Zoba							
Debubawi Keih Bahri	33.6	34.4	0.2	31.3	0.5	100.0	136
Maekel	35.0	54.1	0.3	9.1	1.5	100.0	801
Semenawi Keih Bahri	25.4	48.7	1.5	23.9	0.5	100.0	560
Anseba	16.7	51.8	0.3	30.3	0.8	100.0	589
Gash-Barka	29.2	34.9	1.2	34.2	0.5	100.0	789
Debub	15.6	46.5	0.0	37.6	0.3	100.0	1,301
Education							
No education	18.7	41.2	0.8	38.8	0.5	100.0	2,581
Primary	28.6	50.8	0.2	19.1	1.3	100.0	766
Middle	31.5	58.5	0.4	8.7	0.9	100.0	293
Secondary +	38.3	58.5	0.0	2.7	0.5	100.0	534
Wealth index							
Lowest	20.6	36.9	0.9	41.2	0.4	100.0	744
Second	20.6	37.1	0.4	41.1	0.7	100.0	903
Middle	22.6	38.9	0.4	37.5	0.7	100.0	890
Fourth	22.5	63.1	0.7	12.7	1.0	100.0	795
Highest	34.1	59.3	0.2	6.0	0.5	100.0	697
Total	23.9	46.4	0.5	28.4	0.7	100.0	4,175

Note: If more than one source of ANC was mentioned, only the provider with the highest qualifications is considered in this tabulation.

professional as a provider for antenatal care decreases with increasing birth order. This situation calls for attention and intervention because older women and high-parity women are more vulnerable to high-risk births. Rural woman in Eritrea are five times as likely to receive no antenatal care as urban women. However, the proportion of antenatal care provided by doctors is the same in urban and rural areas; one-third of both urban and rural women who received antenatal care received it from doctors. Zoba Maekel

leads other zobas in antenatal coverage (89 percent), followed by zoba Semenawi Keih Bahri (76 percent). Antenatal coverage is lower in the other zobas and varies from 62 to 69 percent.

Antenatal care coverage is strongly associated with education. For example, 61 percent of mothers with no education, compared with 97 percent of the mothers with some secondary education obtain antenatal services. A woman with some secondary or higher education is twice as likely to receive antenatal care from a doctor as a woman without schooling. Antenatal coverage varies by wealth of women's households. Coverage is around 60 percent in the three lowest quintiles of the wealth index, then rises sharply. However, antenatal care is almost equally likely (21-23 percent) to be provided by doctors for women in all quintiles except the highest quintile; one-third of mothers in the highest quintile received antenatal services from doctors.

No direct comparison of antenatal care indicators reported in the 2002 EDHS and 1995 EDHS can be made because the published results of the previous survey are for *all* births in the *three* years preceding the survey. To measure the change in antenatal care between the surveys, a special tabulation of 1995 EDHS data was done to obtain the most comparable data. This was done by analyzing the maternal care indicators for the last birth in the *three* years preceding the survey.[1] Overall, antenatal care coverage has increased from 50 percent in 1995 to 71 percent in 2002. The increase in antenatal care has occurred in all subgroups (data not shown). It is encouraging to note that there has been an increase of at least 45 percent in antenatal care coverage in rural areas, in zobas Debubawi Keih Bahri and Semenawi Keih Bahri, and among women with no education. In fact, the overall increase in antenatal care in the country is almost entirely due to a tremendous increase in antenatal care coverage among uneducated women.

Number and Timing of Antenatal Visits

Health professionals recommend that the first antenatal visit should occur within the first trimester of the pregnancy and continue on a monthly basis through the 28th week of pregnancy and fortnightly up to 36th week or until birth; this means that ideally 12-13 visits should be made during pregnancy. According to safe motherhood protocol, a pregnant woman should have at least one antenatal visit in each trimester, and at least four visits during her pregnancy. It is recommended that pregnant women register in the first trimester for antenatal care. The earlier the first visit and the more frequent the visits, the better the prospects for the pregnancy, because of timely detection of risk factors and appropriate interventions.

Data in Table 9.2 indicate that 41 percent of women with a birth in the five years preceding the survey made four or more antenatal care visits for the last birth. Only 22 percent were registered in their first trimester. Urban women (72 percent) are much more likely to make at least four visits than their rural counterparts (24 percent). The median number of months pregnant at first ANC visit is 4.3 for urban women and 5.5 for rural women, indicating that the majority of women in both urban and rural areas had their first ANC visit in the second trimester. However, a higher proportion of urban women than rural women started ANC in the first trimester; a majority of women in Asmara had their first ANC visit during the first trimester.

Antenatal Care Content

Pregnancy complications are an important cause of maternal and child morbidity and mortality, and thus informing pregnant women about the danger signs associated with pregnancy and the appropriate action that they should take is an essential component of antenatal care. Also, there are routine health

[1] The comparison of antenatal care indicators was done for last births in the three years preceding the survey in 1995 and last births in the five years before the survey in 2002.

services (tests and examinations) that should be provided to all pregnant women for identifying risk factors.

Table 9.2 Number of antenatal care visits and timing of first visit

Percent distribution of women who had a live birth in the five years preceding the survey by number of antenatal care (ANC) visits for the most recent birth, and by the timing of the first visit, according to residence, Eritrea 2002

Number and timing of ANC visits	Residence				Total
	Total urban	Asmara	Other towns	Rural	
Number of ANC visits					
None	8.3	6.4	9.6	39.9	28.9
1	2.1	1.6	2.5	7.0	5.3
2-3	16.1	8.7	21.6	28.4	24.2
4+	72.3	82.0	65.0	24.2	40.9
Don't know/missing	1.3	1.3	1.3	0.5	0.8
Total	100.0	100.0	100.0	100.0	100.0
Number of months pregnant at time of first ANC visit					
No antenatal care	8.3	6.4	9.6	39.9	28.9
<4	39.3	54.2	28.1	13.1	22.2
4-5	33.5	30.6	35.7	24.5	27.7
6-7	17.4	7.7	24.6	18.7	18.2
8+	1.4	1.0	1.6	3.4	2.7
Don't know/missing	0.2	0.0	0.3	0.3	0.3
Total	100.0	100.0	100.0	100.0	100.0
Median months pregnant at first visit (for those with ANC)	4.3	3.8	5.0	5.5	5.0
Number of women	1,448	618	830	2,727	4,175

As in 1995, all women who had a birth in the five years preceding the survey—whether they had ANC or not—were asked if they received iron tablets and multivitamin tablets during pregnancy. In the 2002 EDHS, women were also asked whether they received antimalarial drugs and vitamin C tablets during pregnancy for births in the five years preceding the survey. Unlike the 1995 EDHS survey, the 2002 EDHS collected information on the components of antenatal care. Women who had antenatal care were asked about the routine screenings they received during any visits to their provider. The women were also asked whether they had been told about the signs of pregnancy complications.

In principle, all pregnant women who visit a health facility for antenatal care should be informed about the signs of pregnancy complications and other antenatal care issues so that they can seek appropriate help in time. Table 9.3 shows that among women who had birth in the five years preceding the survey, only 33 percent who received antenatal care for the most recent birth reported that they were informed about pregnancy complications. Older women, urban women, and those with higher education are better informed about pregnancy complications, compared with younger women, rural women, and uneducated women. Women in zobas Semenawi Keih Bahri (22 percent) and Debub (28 percent) were the least informed and those in zoba Maekel (45 percent) were the most informed about the signs of pregnancy complications.

Table 9.3 Components of antenatal care

Percentage of women with a live birth in the five years preceding the survey who received antenatal care for the most recent birth, by content of antenatal care, and percentage of women with a live birth in the five years preceding the survey who received iron/folic acid tablets, antimalarial drugs, and multivitamins or vitamin C for the most recent birth, according to background characteristics, Eritrea 2002

	Content of antenatal care							Among women with a birth in the 5 years preceding the survey, percentage who received:			
Background characteristic	Informed of signs of pregnancy compli-cations	Weight measured	Height measured	Blood pressure measured	Urine sample taken	Blood sample taken	Number of women	Iron tablets	Anti-malarial drugs	Multi-vitamins/ vitamin C	Number of women
Age at birth											
<20	28.3	87.8	58.7	84.2	42.4	47.8	373	41.1	4.3	30.3	510
20-34	32.4	89.2	66.5	82.3	49.1	51.3	1,983	41.1	4.6	33.2	2,675
35-49	35.6	85.5	60.3	81.0	40.7	44.9	603	34.9	4.3	29.5	990
Birth order											
1	35.2	89.8	66.2	84.2	57.2	60.5	594	41.9	3.0	32.1	761
2-3	33.0	89.6	64.9	83.0	46.8	51.1	1,071	41.0	4.1	30.9	1,411
4-5	31.7	89.8	64.5	83.3	45.4	47.1	641	38.7	4.7	32.2	922
6+	30.2	83.3	61.2	78.5	37.6	39.4	654	37.0	5.9	33.0	1,081
Residence											
Total urban	40.6	95.6	74.3	89.3	68.9	70.8	1,329	44.6	3.8	35.3	1,448
Asmara	50.5	98.2	88.0	95.3	82.1	85.5	578	41.7	0.6	26.7	618
Other towns	33.0	93.6	63.8	84.7	58.8	59.5	751	46.8	6.2	41.7	830
Rural	26.0	82.3	56.1	76.5	28.3	32.2	1,631	37.0	4.9	30.2	2,727
Zoba											
Debubawi Keih Bahri	35.3	87.6	63.0	87.6	72.1	73.4	92	35.4	1.8	23.5	136
Maekel	44.9	97.2	84.4	93.4	74.4	77.4	716	43.5	0.6	28.0	801
Semenawi Keih Bahri	22.1	88.0	71.8	80.2	28.4	26.9	423	49.2	1.4	41.8	560
Anseba	30.6	89.3	69.7	77.4	35.7	38.1	405	41.9	2.7	37.3	589
Gash-Barka	32.8	84.6	59.0	76.4	41.1	45.0	515	41.8	14.0	34.9	789
Debub	27.6	82.5	43.2	79.2	37.5	42.6	808	31.3	3.6	26.8	1,301
Education											
No education	28.2	82.8	58.6	75.5	32.5	34.8	1,567	36.9	5.2	31.6	2,581
Primary	31.7	91.7	61.5	85.7	48.6	53.9	610	41.1	5.5	32.0	766
Middle	28.8	96.2	70.1	88.1	57.8	64.9	265	48.8	2.7	39.7	293
Secondary +	48.7	97.0	81.5	95.6	80.9	81.0	517	45.6	0.7	29.5	534
Total	32.6	88.3	64.3	82.3	46.6	49.5	2,960	39.6	4.5	32.0	4,175

Concerning the routine tests and examinations, 88 percent, 64 percent, and 82 percent of the women who had ANC reported that their weight, height, and blood pressure, respectively, were measured. These results indicate that some providers do not consider height measurement an essential part of the ANC. These routine examinations are more common in urban areas than rural areas and slightly less common for mothers with sixth- or higher-parity births than for mothers with lower-parity births. The three routine measurements are more likely to be part of ANC in zoba Maekel than in other zobas. As a part of ANC in zoba Debub, only four in ten women had their height measured, whereas in other zobas at least six in ten women reported that their height was measured. Women's education and the provision of these ANC services has a positive correlation, that is, the higher the educational level of a woman, the more likely her weight, height, and blood pressure are measured.

The results in Table 9.3 indicate that blood and urine tests are not a routine part of ANC. Slightly less than 50 percent of pregnant women report giving blood and urine samples as a part of their ANC. The likelihood of these laboratory tests being performed decreases with increasing birth order and increases with mother's education. Urban women are more than twice as likely to give blood and urine samples for testing as their rural counterparts. Zoba Semenawi Keih Bahri has the most limited ANC in this respect.

In Eritrea, iron and multivitamin supplements and intermittent treatment against malaria are provided to pregnant women by health facilities only when considered necessary. Iron tablets are given to those pregnant women found to be anemic. Since the EDHS data show that blood samples were taken from only half of mothers during pregnancy, some women who needed iron supplementation may have been missed. The data show that 40 percent of pregnant mothers received iron supplementation, 32 percent received multivitamin supplementation, and 5 percent received antimalaria treatment. Iron supplementation is related to residence, age, birth order, and education. Urban mothers are more likely to receive iron supplements than rural mothers. For low-parity births, births to younger women, and births to educated women, mothers are somewhat more likely to receive iron supplements during pregnancy. Multivitamin supplementation does not follow this pattern, except that coverage is higher in urban areas (35 percent) than in rural areas (30 percent).

The differences in antimalarial treatment by background characteristics are small. Women with higher-order births and lower levels of education are slightly more likely to receive antimalarial treatments. For example, 5 to 6 percent of women with six or more births and women with some primary education or no education received antimalaria treatment compared with 3 percent of women with first births, and less than 1 percent of women with some secondary or higher education. Women in zoba Gash-Barka (14 percent) are most likely to receive antimalarial treatment during pregnancy.

Tetanus Toxoid Immunization

Tetanus toxoid vaccine (TT) is provided to pregnant and nonpregnant women of childbearing age in Eritrea to prevent tetanus in newborns and women during delivery in unhygienic environments. For a minimum protection against tetanus, a pregnant woman should have at least two doses of TT.

Table 9.4 shows that for the last birth in the five years before the survey, half of mothers received at least one tetanus toxoid injection. The corresponding figure from the 1995 EDHS is 35 percent (special tabulation), indicating an increase of almost 50 percent. In 2002, 35 percent of women had at least two doses of TT while 49 percent had none.

Age, birth order, residence, education, and household wealth are related to TT immunization coverage. TT coverage (for two doses) decreases with increasing age of mother and birth order. For example, 44 percent of women under 20 years had two or more TT injections, compared with 29 percent of women age 35 and older. Coverage is higher among women in Asmara and other towns (44 percent each) than among women in rural areas (30 percent), and higher among women in the highest quintile of the wealth index (44 percent) than women in the lowest quintile (28 percent). Although zoba Debubawi Keih Bahri has the lowest antenatal care coverage, it has the highest TT coverage (50 percent) among zobas. On the other hand, zoba Debub has the lowest coverage (29 percent).

9.2 DELIVERY CARE

The objective of providing safe delivery services is to protect the life and health of the mother and her child. An important component of efforts to reduce the health risk to mothers and children is to increase the proportion of babies delivered under the supervision of health professionals. Proper medical attention under hygienic conditions during delivery can reduce the risk of complications and infections that may cause death or serious illness either to the mother or the baby, or both. To assess delivery care in

Table 9.4 Tetanus toxoid injections

Percent distribution of women who had a live birth in the five years preceding the survey by number of tetanus toxoid injections received during pregnancy for the most recent birth, according to background characteristics, Eritrea 2002

Background characteristic	Number of injections				Total	Number of women
	None	One injection	Two or more injections	Don't know/ missing		
Age at birth						
<20	40.1	13.8	44.4	1.7	100.0	510
20-34	47.8	15.9	35.0	1.3	100.0	2,675
35-49	54.7	15.8	28.5	1.0	100.0	990
Birth order						
1	36.0	15.4	47.2	1.4	100.0	761
2-3	45.1	15.8	37.5	1.6	100.0	1,411
4-5	52.6	18.1	28.2	1.1	100.0	922
6+	58.1	13.4	27.4	1.0	100.0	1,081
Residence						
Total urban	33.2	20.7	43.8	2.4	100.0	1,448
Asmara	35.0	17.1	43.7	4.2	100.0	618
Other towns	31.8	23.4	43.8	1.0	100.0	830
Rural	56.6	12.9	29.7	0.7	100.0	2,727
Zoba						
Debubawi Keih Bahri	35.0	13.5	50.0	1.5	100.0	136
Maekel	39.6	15.4	40.7	4.3	100.0	801
Semenawi Keih Bahri	43.3	19.0	37.1	0.7	100.0	560
Anseba	49.5	15.3	34.6	0.6	100.0	589
Gash-Barka	52.2	14.4	32.7	0.7	100.0	789
Debub	54.9	15.4	29.3	0.4	100.0	1,301
Education						
No education	55.8	14.0	29.4	0.8	100.0	2,581
Primary	44.4	17.5	37.0	1.1	100.0	766
Middle	30.7	16.6	49.9	2.8	100.0	293
Secondary +	28.9	19.9	47.9	3.3	100.0	534
Wealth index						
Lowest	60.2	11.2	28.2	0.4	100.0	744
Second	57.4	12.9	28.8	0.8	100.0	903
Middle	52.2	14.4	32.8	0.6	100.0	890
Fourth	39.3	19.8	40.0	1.0	100.0	795
Highest	32.8	20.4	43.8	3.1	100.0	697
Total	48.5	15.6	34.6	1.3	100.0	4,175

Eritrea, place of delivery, assistance at delivery, and delivery characteristics for births in the five years preceding the survey are presented in Tables 9.5, 9.6, and 9.7.

Place of Delivery

Although 70 percent (Table 9.1) of pregnant women in Eritrea receive antenatal care, only 26 percent deliver in health facilities, compared with 73 percent who deliver at home. Almost all deliveries in health facilities are in public sector facilities; the private sector plays a negligible role in delivery

services (less than 1 percent). The likelihood of delivery in a health facility decreases with increasing birth order. Forty-two percent of first births are delivered in a health facility, compared with only 15 percent of sixth- and higher-order births.

There are marked variations between urban and rural areas in the proportion of births delivered in health facilities. Less than one in ten births in rural areas, slightly less than half in other towns, and more than eight in ten in Asmara are delivered in health facilities. Differentials by zoba are striking; only 9 percent of births in Gash-Barka are delivered in health facilities, compared with 67 percent in Maekel and 42 percent in Debubawi Keih Bahri. Wealth and educational background influence where a woman delivers. The higher the educational level of the woman and the higher the level of household wealth, the more likely she is to deliver in a health facility. As expected, women who receive antenatal care are more likely to deliver in a health facility.

The percentage of births delivered in health facilities has increased from 17 percent in 1995 to 26 percent in 2002. The increase is notable in all subgroups shown in Table 9.5.

Delivery Assistance

As mentioned above, 73 percent of births in Eritrea occur at home and therefore a majority are likely to be assisted by non-medical persons. Table 9.6 indicates that 43 percent of births are attended by traditional birth attendants (TBA) and 27 percent by relatives or friends. Twenty-eight percent of births are assisted by health professionals, mostly nurses and midwives. As age of mother and birth order increase, births are less likely to occur under the supervision of a health professional. For example, health professionals attend 43 percent of first births and only 17 percent of deliveries for sixth- or higher-order births. Residence, education, and household wealth also influence the provision of delivery care by health professionals. The differentials by background characteristics for delivery assistance show the same pattern as the differentials for delivery in a health facility. The proportion of births attended by health professionals has increased from 21 percent in 1995 to 28 percent in 2002.

Caesarean Section and Size at Birth

Caesarean sections (C-sections) are generally performed because the mother has medical problems or complications at the time of delivery.

Table 9.7 shows that 3 percent of births in the five years preceding the survey were by caesarean section, a slight increase from 1995. Generally, a C-section rate below 5 percent is thought to be a reflection of limited access to maternal health services (FCI, 1998). Therefore, these findings suggest that many Eritrean women do not have access to life-saving emergency obstetrical care. C-sections are less common among rural women, women with a large number of children, women with no education, and those in the lower quintiles of the wealth index. Deliveries by C-section are less than 2 percent in all zobas except zoba Maekel (9 percent).

Birth weight is closely related to infant and child health and mortality. Two and half kilograms is consider normal birth weight, and babies weighing less than that are regarded as having low birth weight. In the 2002 EDHS, for all births during the five years preceding the survey, mothers were asked whether their baby had been weighed at birth, and if so, how much the baby weighed. In addition, because most women do not deliver in a health facility, the mothers were asked for their subjective assessment of whether the child was very large, larger than average, average, smaller than average, or very small at birth. Birth weight was reported for slightly more than one-fourth (27 percent) of births (Table 9.7). Among these births, 8 percent (2 percent of all births) were classified as low birth weight; i.e., the infant weighed less than 2.5 kg at birth. The proportion of births classified as low birth weight in 1995 was

Table 9.5 Place of delivery

Percent distribution of live births in the five years preceding the survey by place of delivery, according to background characteristics, Eritrea 2002

Background characteristic	Health facility		Home	Other	Don't know/ missing	Total	Number of births
	Public sector	Private sector					
Mother's age at birth							
< 20	27.9	0.4	70.4	0.3	0.9	100.0	773
20-34	27.5	0.2	71.5	0.2	0.6	100.0	4,035
35-49	20.6	0.4	78.2	0.4	0.4	100.0	1,347
Birth order							
1	41.1	0.4	57.9	0.0	0.6	100.0	1,160
2-3	29.5	0.3	69.2	0.2	0.8	100.0	2,111
4-5	21.0	0.3	78.2	0.2	0.4	100.0	1,350
6+	14.4	0.2	84.3	0.6	0.6	100.0	1,533
Residence							
Total urban	61.5	0.2	37.4	0.0	0.9	100.0	2,030
Asmara	82.9	0.4	15.6	0.0	1.0	100.0	844
Other towns	46.2	0.1	52.9	0.0	0.8	100.0	1,186
Rural	8.6	0.3	90.2	0.4	0.5	100.0	4,125
Zoba							
Debubawi Keih Bahri	41.5	0.5	57.4	0.0	0.7	100.0	195
Maekel	66.8	0.4	31.2	0.0	1.6	100.0	1,118
Semenawi Keih Bahri	19.2	0.1	80.5	0.0	0.3	100.0	845
Anseba	14.0	0.6	85.2	0.0	0.2	100.0	911
Gash-Barka	9.0	0.0	90.0	0.4	0.7	100.0	1,136
Debub	19.7	0.3	79.2	0.5	0.3	100.0	1,950
Mother's education							
No education	10.2	0.2	88.8	0.3	0.5	100.0	3,909
Primary	32.9	0.3	65.7	0.1	1.0	100.0	1,118
Middle	54.1	0.4	44.9	0.0	0.7	100.0	399
Secondary +	85.5	0.3	13.6	0.0	0.5	100.0	729
Antenatal care visits[1]							
None	6.9	0.1	91.2	0.4	1.4	100.0	1,207
1-3	14.7	0.2	85.0	0.1	0.1	100.0	1,230
4+	53.4	0.4	46.2	0.0	0.0	100.0	1,705
Wealth index							
Lowest	5.1	0.3	94.0	0.1	0.5	100.0	1,107
Second	8.3	0.4	90.5	0.1	0.6	100.0	1,389
Middle	10.6	0.1	88.6	0.4	0.4	100.0	1,336
Fourth	40.6	0.1	57.9	0.6	0.9	100.0	1,163
Highest	78.7	0.5	20.3	0.0	0.5	100.0	959
Total	26.1	0.3	72.8	0.2	0.6	100.0	6,156

Note: Total includes 32 women with missing information on antenatal care visits, who are not shown separately.
[1] Includes only the most recent birth in the five years preceding the survey

Table 9.6 Assistance during delivery

Percent distribution of live births in the five years preceding the survey by person providing assistance during delivery, according to background characteristics, Eritrea 2002

Background characteristic	Doctor	Nurse/ midwife/ auxiliary midwife	Traditional birth attendant	Relative/ other	No one	Don't know/ missing	Total	Number of births
Mother's age at birth								
< 20	10.6	19.4	41.2	27.7	0.6	0.5	100.0	773
20-34	7.6	22.2	42.9	26.4	0.3	0.7	100.0	4,035
35-49	7.1	15.7	45.5	30.4	0.7	0.6	100.0	1,347
Birth order								
1	15.3	27.9	33.6	22.6	0.2	0.4	100.0	1,160
2-3	8.8	23.2	40.8	26.1	0.3	0.8	100.0	2,111
4-5	4.5	18.3	47.3	29.2	0.3	0.4	100.0	1,350
6+	4.0	12.8	50.4	31.4	0.7	0.8	100.0	1,533
Residence								
Total urban	17.1	47.6	24.5	9.6	0.4	0.9	100.0	2,030
Asmara	24.0	62.7	10.2	2.2	0.2	0.7	100.0	844
Other towns	12.1	36.8	34.7	14.9	0.4	1.0	100.0	1,186
Rural	3.3	7.1	52.5	36.2	0.4	0.5	100.0	4,125
Zoba								
Debubawi Keih Bahri	16.4	25.5	38.2	19.0	0.2	0.7	100.0	195
Maekel	19.9	52.1	24.3	2.2	0.2	1.4	100.0	1,118
Semenawi Keih Bahri	5.3	17.1	51.7	25.5	0.1	0.2	100.0	845
Anseba	5.0	10.4	59.3	25.0	0.0	0.3	100.0	911
Gash-Barka	4.2	6.8	56.5	31.5	0.0	0.9	100.0	1,136
Debub	4.7	15.8	35.8	42.3	1.1	0.3	100.0	1,950
Mother's education								
No education	3.5	8.5	52.5	34.8	0.3	0.5	100.0	3,909
Primary	9.7	25.9	39.7	22.7	1.0	1.0	100.0	1,118
Middle	18.0	41.2	25.4	14.7	0.0	0.7	100.0	399
Secondary +	23.1	64.8	9.2	2.4	0.0	0.5	100.0	729
Wealth index								
Lowest	1.5	5.2	57.9	34.9	0.1	0.5	100.0	1,107
Second	4.3	5.4	53.4	35.7	0.3	0.8	100.0	1,389
Middle	4.0	8.9	49.4	36.7	0.6	0.4	100.0	1,336
Fourth	11.2	32.7	36.8	18.5	0.1	0.7	100.0	1,163
Highest	21.5	59.5	12.1	5.7	0.7	0.5	100.0	959
Total 2002	**7.9**	**20.4**	**43.3**	**27.4**	**0.4**	**0.6**	**100.0**	**6,156**
Total 1995	7.9	12.7	53.8	23.7	1.7	0.2	100.0	2,580

Note: If the respondent mentioned more than one person assisting during delivery, only the most qualified person is considered in this tabulation.

14 percent (2 percent of all births), implying a decline in low birth weight babies. However, the results should be interpreted with caution because only a small proportion of births were weighed (27 percent in 2002 and 14 percent in 1995).

Table 9.7 presents information on mothers' assessment of their baby's size at birth. It is important to remember that these assessments may vary among respondents because they are based on the mother's

Table 9.7 Delivery characteristics

Percentage of live births in the five years preceding the survey delivered by caesarean section, and percent distribution by birth weight and by mother's estimate of baby's size at birth, according to background characteristics, Eritrea 2002

Background characteristic	Delivery by caesarean section	Birth weight					Size of child at birth					Number of births
		Not weighed	Less than 2.5 kg	2.5 kg or more	Don't know/ missing	Total	Very small	Smaller than average	Average or larger	Don't know/ missing	Total	
Mother's age at birth												
< 20	3.9	69.7	3.9	22.7	3.7	100.0	22.1	10.1	67.0	0.9	100.0	773
20-34	2.6	68.2	2.1	27.1	2.5	100.0	15.8	8.8	73.1	2.3	100.0	4,035
35-49	2.3	75.9	1.5	20.2	2.4	100.0	17.4	10.2	70.9	1.5	100.0	1,347
Birth order												
1	6.4	57.3	4.4	36.1	2.2	100.0	20.4	9.1	69.1	1.3	100.0	1,160
2-3	2.8	65.9	2.5	28.7	2.9	100.0	15.7	9.0	72.8	2.5	100.0	2,111
4-5	1.7	74.5	1.5	22.0	2.0	100.0	14.8	9.8	73.7	1.7	100.0	1,350
6+	0.7	81.6	0.8	14.3	3.3	100.0	17.9	9.4	71.1	1.7	100.0	1,533
Residence												
Total urban	7.0	31.3	5.3	60.1	3.3	100.0	11.7	7.1	79.6	1.6	100.0	2,030
Asmara	11.3	8.8	8.9	80.4	2.0	100.0	9.0	5.0	84.7	1.3	100.0	844
Other towns	4.0	47.3	2.8	45.7	4.2	100.0	13.5	8.7	76.0	1.8	100.0	1,186
Rural	0.6	89.2	0.7	7.8	2.4	100.0	19.5	10.3	68.1	2.1	100.0	4,125
Zoba												
Debubawi Keih Bahri	1.9	57.0	3.5	33.9	5.6	100.0	47.2	8.4	42.3	2.1	100.0	195
Maekel	8.9	21.2	7.4	68.4	2.9	100.0	9.5	5.2	83.1	2.2	100.0	1,118
Semenawi Keih Bahri	1.4	77.8	1.9	15.1	5.2	100.0	19.4	12.6	63.4	4.6	100.0	845
Anseba	1.4	84.3	1.1	13.0	1.6	100.0	20.0	9.6	70.0	0.4	100.0	911
Gash-Barka	0.5	85.9	0.7	11.6	1.8	100.0	18.3	10.4	70.2	1.2	100.0	1,136
Debub	1.8	80.2	0.7	17.1	2.1	100.0	14.8	9.5	74.0	1.7	100.0	1,950
Mother's education												
No education	0.8	86.6	0.9	9.6	2.8	100.0	19.9	10.7	67.4	2.0	100.0	3,909
Primary	3.0	61.6	3.1	32.4	2.9	100.0	12.4	7.7	77.9	2.0	100.0	1,118
Middle	1.8	40.8	7.3	49.5	2.4	100.0	13.7	7.8	76.9	1.6	100.0	399
Secondary +	13.1	10.3	4.9	83.3	1.5	100.0	9.6	5.1	83.6	1.6	100.0	729
Wealth index												
Lowest	0.3	92.8	0.7	4.1	2.4	100.0	23.3	9.9	64.7	2.1	100.0	1,107
Second	0.8	89.6	0.6	6.7	3.1	100.0	18.4	12.5	66.6	2.4	100.0	1,389
Middle	0.7	85.7	0.6	11.2	2.6	100.0	18.0	9.3	71.2	1.5	100.0	1,336
Fourth	3.6	51.3	3.9	41.6	3.2	100.0	12.8	8.3	76.9	2.0	100.0	1,163
Highest	9.2	18.1	5.9	74.1	1.9	100.0	10.4	5.3	83.0	1.3	100.0	959
Total	2.7	70.1	2.2	25.0	2.7	100.0	16.9	9.3	71.9	1.9	100.0	6,156

own perception of the size of her baby and not on a uniform definition. Twenty-six percent of mothers reported that their child was either smaller than average or very small (9 percent and 17 percent, respectively), compared with 27 percent estimated from the 1995 EDHS. Zoba Debubawi Keih Bahri has the highest proportion of children reported as very small or smaller than average at birth (56 percent). In addition, first-born children, and children of young mothers, rural mothers, uneducated mothers, and mothers in the lowest quintile of the wealth index are more likely than other births to be reported as smaller than average or very small at birth.

9.3 POSTNATAL CARE

Proper care after delivery is important for mothers, particularly in the case of births that occur at home; therefore, postnatal care is a vital component of maternal and child health care services. For noninstitutional births particularly, postnatal care enables detection of complications that may threaten the survival of the mother.

In the 2002 EDHS, to assess the extent of postnatal care utilization, women whose last birth was delivered outside a health facility were asked whether they received a postpartum checkup from a health professional or a traditional birth attendant.

Table 9.8 shows the percent distribution of women whose last birth in the five years preceding the survey occurred outside a health facility by timing of postnatal care. The data indicate that postnatal care is rare in Eritrea. More than nine in ten women (92 percent) with noninstitutional births do not receive any checkup. Only 2 percent of such mothers in the 2002 EDHS received postnatal care in the first two days after delivery, and 5 percent 7 to 41 days after delivery. The highest proportion of women who received postnatal care within two days after birth is 7 percent among women in Asmara and those who have at least some secondary education. It is surprising that postnatal care is so uncommon when 43 percent of children age 12-23 months receive polio vaccine at birth (Table 9.12) and 43 percent of births are attended by traditional birth attendants (Table 9.6). These findings indicate that little attention has been given to postnatal care as a component of maternal and child health care.

9.4 REPRODUCTIVE HEALTH CARE BY WOMEN'S STATUS

Table 9.9 shows whether a woman's use of reproductive health services varies according to her level of empowerment, as measured by two women's status indicators: participation in household decisionmaking and attitude toward wife beating. The more say a woman has in decisionmaking, the more likely she is to have control over her reproductive health care. On the other hand, reproductive health care coverage is likely to vary negatively relative to the number of reasons she believes wife beating is justified.

Table 9.9 indicates that the number of household decisions in which a woman participates has a positive influence on her likelihood of receiving antenatal, delivery, and postnatal care. For example, three-fourths of women who participate in making five or six decisions received antenatal care from health professionals, compared with 53 percent of women who are not involved in any decisionmaking. One-third of women who participate in five or six decisions utilized postnatal care[2] in the first two days after delivery, compared with one-fourth of women who had no say in any decisionmaking.

Similarly, women who believe a husband is not justified in beating his wife for any reason are more likely to receive antenatal, delivery, and postnatal care than women who believe there are reasons that justify wife beating. For example, 78 percent of women who are against wife beating for any reason received antenatal care, compared with 60 percent of women who believe that wife beating is justified for five reasons.

[2] Mothers who delivered in a health facility are assumed to have received a postnatal checkup.

Table 9.8 Postnatal care by background characteristics

Percent distribution of women whose last live birth in the five years preceding the survey occurred outside a health facility by timing of postnatal care, according to background characteristics, Eritrea 2002

Background characteristic	Timing of first postnatal checkup						
	Within 2 days of delivery	3-6 days after delivery	7-41 days after delivery	Don't know/ missing	Did not receive postnatal checkup[1]	Total	Number of women
Mother's age at birth							
<20	1.4	2.2	4.7	0.0	91.7	100.0	351
20-34	2.1	1.1	4.8	0.1	92.0	100.0	1,872
35-49	1.5	1.3	4.3	0.6	92.3	100.0	761
Birth order							
1	1.7	1.6	5.8	0.1	90.8	100.0	424
2-3	2.0	1.2	4.7	0.1	92.0	100.0	947
4-5	2.6	1.5	6.0	0.1	89.8	100.0	703
6+	1.2	0.9	3.1	0.5	94.3	100.0	910
Residence							
Total urban	3.1	2.5	5.5	0.1	88.8	100.0	513
Asmara	6.5	0.0	7.0	0.0	86.5	100.0	84
Other towns	2.5	3.0	5.2	0.2	89.2	100.0	429
Rural	1.6	1.0	4.5	0.2	92.7	100.0	2,471
Zoba							
Debubawi Keih Bahri	3.2	2.6	7.4	0.7	86.1	100.0	72
Maekel	4.2	1.1	6.9	0.5	87.3	100.0	236
Semenawi Keih Bahri	1.3	2.1	4.8	0.4	91.3	100.0	437
Anseba	1.1	1.1	3.4	0.0	94.4	100.0	495
Gash-Barka	2.3	1.5	7.0	0.2	89.0	100.0	704
Debub	1.5	0.7	2.9	0.2	94.7	100.0	1,038
Education							
No education	1.5	1.0	4.4	0.3	92.9	100.0	2,278
Primary	2.5	1.8	5.6	0.1	89.9	100.0	502
Middle	2.6	4.1	5.4	0.0	87.9	100.0	126
Secondary +	7.1	1.4	5.6	0.0	85.9	100.0	77
Total	1.9	1.2	4.7	0.2	92.0	100.0	2,984

[1] Includes women who received the first postnatal checkup after 41 days

Table 9.9 Reproductive health care by women's status

Percentage of women with a live birth in the five years preceding the survey who received antenatal and postnatal care from a health professional for the most recent birth, and percentage of births in the five years preceding the survey for which mothers received professional delivery care, by women's status indicators, Eritrea 2002

Women's status indicator	Percentage of women with antenatal care from a health professional[1]	Percentage received postnatal care within the first two days of delivery[2]	Number of women	Percentage of births assisted by a health professional[1]	Number of births
Number of decisions in which woman has final say[3]					
0	53.4	26.2	120	19.6	189
1-2	65.1	23.2	820	21.1	1,201
3-4	69.1	25.8	1,061	24.4	1,596
5-6	73.9	34.6	2,174	33.5	3,170
Number of reasons wife beating is justified					
0	77.7	39.9	1,109	39.3	1,610
1-2	75.6	36.0	988	34.3	1,433
3-4	66.2	22.6	1,250	20.5	1,865
5	60.4	20.0	827	18.8	1,247
Total	70.4	29.9	4,175	28.3	6,156

[1] Doctor, nurse or midwife
[2] Include mothers who delivered in a health facility; mothers who delivered in a health facility are assumed to have received postnatal care.
[3] Herself or jointly with others

9.5 USE OF MOSQUITO NETS BY WOMEN

Malaria, which is transmitted by mosquitoes, is an endemic problem in Eritrea and is one of the leading causes of outpatient and inpatient morbidity. According to the National Malaria Control Program of the Ministry of Health, about 70 percent of Eritrean people live in malaria endemic areas.

The World Health Organization reported that 3,000 children in Africa die from malaria every day because of lack of access to health care, life-saving drugs, and treated mosquito nets (WHO/UNICEF, 2003). Children under five and pregnant women are more vulnerable to malaria. The report indicates that malaria causes one in four deaths among children in Africa. During pregnancy the risk of malaria increases four times and the risk of death from malaria doubles. It is important therefore that women and children use mosquito nets to reduce the risk of illness and death.

The Ministry of Health is distributing insecticide-treated nets (ITNs) to all residents in malaria risk areas free of charge (MOH/CDC, 2002). Every household in these areas should get at least two ITNs.

In the 2002 EDHS, all women age 15-49 were asked if they slept under a mosquito net the night before the interview. If they did, they were asked how long ago they bought the net and when the net was last treated. Mosquito nets that had been bought or treated in the six months before the interview were

assumed to be ITNs. Table 9.10 shows that 7 percent of all women as well as pregnant women slept under a mosquito net the night before the interview, however, only 3 percent slept under an ITN, indicating that most pregnant women are exposed to malaria risk that can easily be prevented by using ITNs. The results show that pregnant women in urban areas (5 percent), those with at least some secondary education (5 percent), and those who are in the highest quintile of the wealth index (6 percent) are more likely to use ITNs than other pregnant women. By zoba, use of ITNs by pregnant women is highest in zoba Anseba (5 percent) and lowest in zobas Maekel and Gash-Barka (1 percent). For all women, use of mosquito nets and ITNs is highest in zobas Semenawi Keih Bahri, Anseba and Debub.

Table 9.10 Use of mosquito nets by all women and pregnant women

Percentage of all women and pregnant women age 15-49 who slept under a mosquito net (treated or untreated) and an insecticide treated net (ITN) the night before the interview, by background characteristics, Eritrea 2002

	All women			Pregnant women		
Background characteristic	Slept under a mosquito net[1]	Slept under an ITN[2]	Number of women	Slept under a mosquito net	Slept under an ITN[2]	Number of pregnant women
Residence						
Total urban	5.4	2.3	3,767	8.7	4.5	265
Asmara	1.3	0.4	1,899	0.0	0.0	113
Other towns	9.6	4.2	1,868	15.1	7.8	152
Rural	7.4	3.0	4,987	5.5	2.1	508
Zoba						
Debubawi Keih Bahri	4.6	1.7	324	6.1	2.5	29
Maekel	1.5	0.5	2,264	0.6	0.6	161
Semenawi Keih Bahri	12.3	5.7	1,148	11.3	3.9	103
Anseba	8.5	2.7	1,130	11.8	5.4	1000
Gash-Barka	4.8	2.0	1,500	1.6	1.2	152
Debub	8.9	3.8	2,388	9.8	4.2	227
Education						
No education	8.0	3.0	4,384	6.5	2.3	462
Primary	7.1	2.9	1,637	8.9	3.8	149
Middle	5.4	2.8	974	(1.4)	(1.4)	54
Secondary +	2.8	1.4	1,760	6.3	5.0	108
Wealth index						
Lowest	7.8	3.1	1,344	7.4	3.4	140
Second	8.1	2.9	1,626	5.5	2.3	164
Middle	7.3	3.1	1,659	5.2	0.8	185
Fourth	6.7	3.2	1,806	8.7	3.8	119
Highest	3.5	1.3	1,978	7.0	5.5	132
Total	6.5	2.7	8,754	6.6	2.9	772

Note: Figures in parentheses are based on 25-49 unweighted cases.
[1] Includes ITNs
[2] Mosquito net either bought or treated with insecticide during the six months preceding the interview

9.6 CHILDHOOD VACCINATION

Although currently, no community-based data are available on the prevalence of vaccine preventable diseases in Eritrea, experience and health facility reports of the Ministry of Health (MOH), indicate that vaccine preventable diseases account for a substantial number of deaths among young children. Among vaccine preventable diseases, measles is responsible for the highest number of cases and childhood deaths.

Universal immunization is one of the main strategies to reduce infant and child mortality. The MOH in Eritrea vaccinates children against six vaccine preventable diseases—tuberculosis, diphtheria, whooping cough, tetanus, polio, and measles. In January 2002, a new vaccine against another important disease, hepatitis B, was added to the routine Expanded Program on Immunization (EPI) vaccines but was too new to be included in the 2002 EDHS questionnaire. Data on immunizations collected in the 2002 EDHS are useful for monitoring and evaluating the current immunization program and for assisting in future program planning.

The Eritrean EPI generally follows the WHO guidelines for vaccinating children. BCG is given at birth or first clinic contact. DPT and polio vaccines require three vaccinations at approximately 6, 10, and 14 weeks of age; measles vaccine is given at nine months of age. A first dose of polio—Polio 0—should be given at or around birth. A child is considered to be fully vaccinated if the child has received a dose of BCG vaccine (against tuberculosis), three doses of DPT (to prevent diphtheria, pertussis, and tetanus); three doses of polio vaccine (excluding Polio 0); and a measles vaccination.

In the 2002 EDHS, information on childhood immunizations was obtained for children under five from interviewed mothers in two ways. When a vaccination card was available, this served as the source of information. The dates of vaccination were copied from the card to the questionnaire. The mother was asked also to recall which vaccines the child received if there was no vaccination card or if the vaccination was not recorded on the card. Mothers were also asked the number of doses of DPT and polio vaccine the children received.

Table 9.11 shows information on vaccination coverage according to the source of the information, that is, the child's vaccination card or the mother's report. The table is restricted to children 12-23 months of age in order to focus on recent coverage levels. It should be noted that vaccination data are subject to memory bias when mothers cannot show their children's vaccination cards.

Vaccination cards were available for 77 percent of children. For the rest of the children, vaccination information was based on mothers' reports.

Overall, 76 percent of children age 12-23 months are fully immunized, while 5 percent have not received any vaccinations at all (third row in the table). This is a substantial improvement since 1995 when only 41 percent of children were fully vaccinated and 38 percent had no vaccinations.

Polio 0 vaccine, a vaccine given at or around the time of birth, was given to 43 percent of children age 12-23 months. The proportion receiving Polio 0 is higher than the percentage of children who were delivered at health facilities (26 percent), indicating that some children may have received Polio 0 vaccine at their first contact with a health worker. Coverage for BCG and the first doses of polio and DPT vaccines is over 90 percent; coverage for measles is also high (84 percent). Although DPT and polio vaccines are given at the same time, a slightly higher percentage of children received the polio vaccine. This is no doubt attributable to the national immunization day campaigns against polio. Vaccine coverage declines slightly for subsequent doses of polio and DPT, with 83 percent of children 12-23 months receiving three doses of these vaccines.

Table 9.11 Vaccinations by source of information

Percentage of children 12-23 months who had received specific vaccines at any time before the survey, by source of information (vaccination card or mother's report), and percentage vaccinated by 12 months of age, Eritrea 2002

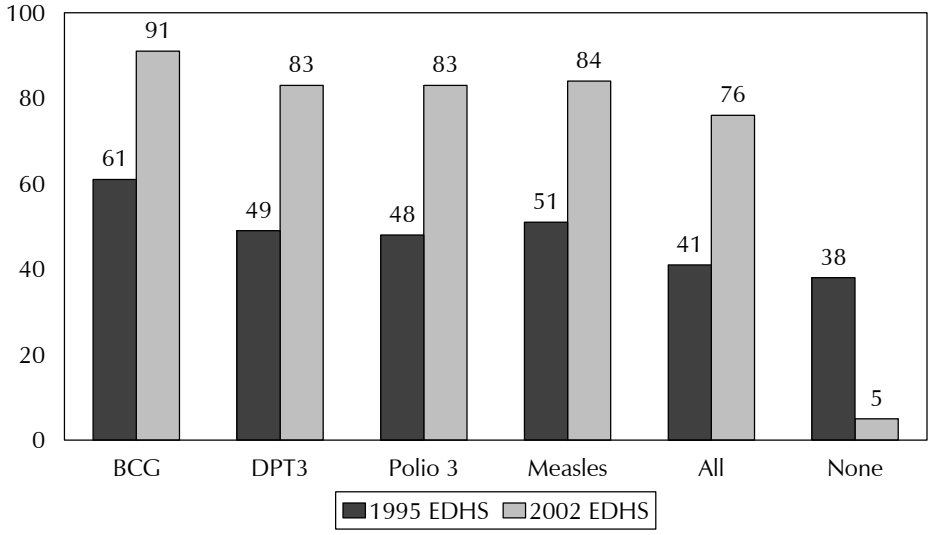
	Percentage of children who had received:											
		DPT			Polio[1]							Number of
Source of information	BCG	1	2	3	0	1	2	3	Measles	All[2]	None	children
Vaccinated any time before the survey												
Vaccination card	76.3	76.3	74.2	72.1	36.1	76.3	74.7	72.5	70.8	68.2	0.0	736
Mother's report	15.0	14.3	13.4	10.7	6.5	17.6	15.6	10.8	13.3	7.7	5.2	223
Either source	91.4	90.6	87.6	82.8	42.6	93.9	90.3	83.3	84.2	75.9	5.2	959
Vaccinated by 12 months of age[3]	89.3	88.2	84.7	79.1	42.2	91.4	87.1	79.3	75.5	69.2	7.9	959

[1] Polio 0 is the polio vaccination given at birth.
[2] BCG, measles and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth)
[3] For children whose information was based on the mother's report, the proportion of vaccinations given during the first year of life was assumed to be the same as for children with a written record of vaccination.

One way to measure the success of the immunization program is to calculate the dropout rates for polio and DPT. The dropout rate is the proportion of children who received the first dose but did not receive the third dose of a specific vaccine. The dropout rate for both vaccines is about 10 percent. Vaccinations are most effective if given at the proper age. It is recommended that all children receive a complete schedule of vaccinations by their first birthday. Table 9.11 also shows the percentage of children age 12-23 months vaccinated by 12 months of age: BCG (89 percent), measles (76 percent), and the third dose of DPT (79 percent). These levels of coverage are only slightly lower than those for children age 12-23 months vaccinated at any time before the survey. The largest difference between the two groups is for measles (9 percent).

Comparison of results of the 2002 EDHS and the 1995 EDHS in Figure 9.1 shows that there has been substantial improvement in coverage for all vaccines.

Figure 9.1
Percentage of Children Age 12-23 Months Who Have Received Specific Vaccinations, 1995 EDHS and 2002 EDHS



Note: Based on vaccination card and mother's report EDHS 1995 and EDHS 2002

Vaccination Coverage by Background Characteristics

Table 9.12 presents vaccination coverage among children 12-23 months by background characteristics. The differentials are discussed in terms of children fully vaccinated because the coverage

Table 9.12 Vaccinations by background characteristics

Percentage of children 12-23 months who received specific vaccines at any time before the survey (according to a vaccination card or the mother's report), and percentage with a vaccination card, by background characteristics, Eritrea 2002

Background characteristic	Percentage of children who received:											Percentage with vaccination card	Number of children
		DPT			Polio[1]								
	BCG	1	2	3	0	1	2	3	Measles	All[2]	None		
Sex													
Male	90.1	88.7	86.3	81.6	40.5	92.7	89.7	84.0	83.8	76.0	6.0	75.8	519
Female	92.9	92.8	89.1	84.2	45.1	95.3	91.0	82.4	84.6	75.9	4.3	77.9	439
Birth order													
1	96.0	94.9	91.7	88.9	50.3	96.4	93.0	86.6	88.7	79.5	2.7	77.9	206
2-3	92.6	91.9	88.9	85.2	50.3	93.2	91.0	86.6	86.3	79.5	4.9	80.9	332
4-5	91.8	91.0	90.0	82.3	38.3	94.6	90.0	81.9	83.7	76.6	5.4	76.0	216
6+	84.3	83.7	78.9	73.4	27.1	91.8	86.8	76.1	76.8	65.9	8.1	69.6	205
Residence													
Total urban	97.6	96.7	96.1	93.5	74.0	97.1	96.0	91.3	93.8	88.4	1.8	82.7	355
Asmara	98.7	98.1	98.1	95.4	95.4	97.5	97.5	91.1	96.1	89.2	1.3	80.2	175
Other towns	96.6	95.3	94.1	91.6	53.0	96.8	94.5	91.4	91.7	87.6	2.3	85.2	180
Rural	87.7	87.0	82.6	76.5	24.2	92.0	86.9	78.6	78.5	68.6	7.2	73.2	604
Zoba													
Debubawi Keih Bahri	90.8	88.5	81.1	76.5	59.5	93.5	85.2	75.6	70.2	60.1	6.0	70.7	28
Maekel	97.9	97.3	97.3	95.0	90.7	97.3	97.3	91.9	96.1	89.2	1.6	81.0	205
Semenawi Keih Bahri	89.1	90.6	86.9	78.8	29.8	91.9	88.2	79.8	80.3	69.9	7.4	76.8	130
Anseba	97.9	96.9	96.0	94.8	22.6	97.3	95.9	93.0	93.8	91.5	2.1	92.4	149
Gash-Barka	87.1	84.0	79.4	73.5	36.8	90.1	83.9	75.6	75.7	64.2	8.5	66.1	186
Debub	86.8	86.6	82.1	75.8	25.1	93.0	87.7	79.0	78.7	69.6	6.3	72.7	261
Mother's education													
No education	86.4	85.7	81.9	75.0	25.4	91.2	86.4	77.2	77.1	67.0	8.1	71.0	563
Primary	98.0	97.6	94.8	93.1	51.8	98.5	95.7	92.7	92.7	87.1	1.2	88.0	182
Middle	100.0	96.1	94.6	92.9	60.4	97.6	94.7	85.3	95.5	82.1	0.0	81.7	65
Secondary +	98.3	98.1	97.3	95.3	88.9	96.9	96.3	94.1	95.6	93.5	1.7	82.5	148
Wealth index													
Lowest	92.0	91.8	87.5	81.5	24.2	95.8	92.3	84.9	83.8	74.4	4.2	78.4	179
Second	88.1	84.4	81.5	75.0	23.1	89.2	83.0	74.2	76.8	65.5	8.7	71.0	184
Middle	83.3	83.7	78.8	73.2	24.5	90.7	85.5	75.8	72.6	64.2	8.9	69.8	194
Fourth	95.0	94.6	92.3	88.5	53.0	94.5	92.4	87.8	90.4	84.5	3.5	82.1	190
Highest	99.2	98.5	97.8	96.2	86.7	99.2	98.5	93.4	96.4	90.9	0.8	85.2	182
Total 2002	**91.4**	**90.6**	**87.6**	**82.8**	**42.6**	**93.9**	**90.3**	**83.3**	**84.2**	**75.9**	**5.2**	**76.7**	**959**
Total 1995	60.7	60.9	55.3	48.8	19.1	60.6	55.9	47.7	51.0	41.4	37.7	50.3	725

[1]Polio 0 is the polio vaccination given at birth.
[2]BCG, measles and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth)

patterns for all vaccines are similar. As expected, urban coverage is higher than rural coverage, with 88 percent of urban children age 12-23 months immunized, compared with 69 percent of children in rural areas. However, the urban-rural gap has narrowed dramatically. In 1995, urban children were more than two and one-half times as likely to be fully immunized as rural children. Children of sixth- or higher birth order are less likely to be vaccinated compared with children of lower birth orders. Mother's education is positively related to children's immunization. Coverage ranges from 67 percent among children of mothers with no schooling to 94 percent among children of mothers with at least some secondary education. However, it is encouraging to note that since 1995, the proportion of children of uneducated mothers who are fully immunized has more than doubled, from 32 to 67 percent. Zoba variations give some indication of the success of the EPI program in reaching out to all population subgroups. Coverage by zoba ranges from a high of 92 percent in zoba Anseba to a low of 60 percent in zoba Debubawi Keih Bahri.

9.7 ACUTE RESPIRATORY INFECTIONS

Acute respiratory infection (ARI), particularly pneumonia, is one of the leading causes of childhood morbidity and mortality throughout the world. Early recognition and treatment is important for the prevention of death due to pneumonia. Therefore, emphasis is placed on early recognition of the signs of impending severity, both by mothers and primary health care workers, and early treatment.

In the 2002 EDHS, the prevalence of ARI was estimated by asking mothers with children under five years of age whether their children had been ill with cough accompanied by short, rapid breathing in the two weeks preceding the survey. These symptoms are signs of pneumonia. Mothers were then asked about their response to the illness. It should be noted, however, that morbidity data collected in surveys are subjective and are based on perception of the illness. As with other common childhood diseases, estimates of the prevalence of ARI are subject to recall bias and seasonal variation.

Table 9.13 shows that 19 percent of children under age five had symptoms of ARI in the two weeks before the survey. ARI is low in children under six months (17 percent), peaks at age 6-11 months (24 percent), and then decreases to 15 percent at age 48-59 months. There are only slight differences in prevalence by sex of the child or birth order. ARI is much lower in urban areas (13 percent) than in rural areas (22 percent). Mother's education is also a factor in the prevalence of ARI; children of uneducated mothers are twice as likely to have ARI as children whose mothers have at least some secondary level of education.

ARI is lower in zobas Debubawi Keih Bahri (8 percent) and Maekel (12 percent) than in other zobas. There are only small variations among the other four zobas: Semenawi Keih Bahri (19 percent), Anseba (17 percent), Gash-Barka (21 percent) and Debub (23 percent). ARI is highest among children from households in the lowest quintile of the wealth index (25 percent).

Table 9.13 shows that 44 percent of children with respiratory illness were taken to a health provider or facility. Children between 6 and 23 months with ARI (52-56 percent) are more likely to be taken to a health facility than older or younger children. Also, more than 50 percent of first-born children ill with ARI are taken to a health facility or provider. Urban children are much more likely to be taken to a health facility when they have ARI than their rural counterparts. Educated mothers were more likely than uneducated mothers to seek medical treatment for their children with ARI.

Children living in zobas Maekel and Gash-Barka are more likely to receive care for ARI at a health facility than children in other zobas. This regional variation may be due to access to health facilities or knowledge of symptoms of ARI; zoba Maekel has the highest level of access to health providers (62 percent) while Anseba has the lowest (33 percent).

Table 9.13 Prevalence and treatment of symptoms of acute respiratory infection (ARI)

Percentage of children under five years of age who had a cough accompanied by short, rapid breathing (symptoms of ARI), and percentage of children with symptoms of ARI for whom treatment was sought from a health facility or provider, by background characteristics, Eritrea 2002

Background characteristic	Prevalence of ARI among children under five		Treatment of children with symptoms of ARI	
	Percentage of children with symptoms of ARI	Number of children	Percentage for whom treatment was sought from a health facility or provider[1]	Number of children
Age in months				
<6	17.3	660	39.8	114
6-11	24.4	621	52.3	152
12-23	23.2	959	55.7	222
24-35	20.8	1,042	36.9	217
36-47	16.3	1,205	34.8	196
48-59	14.5	1,262	41.5	182
Sex				
Male	19.3	2,948	44.2	570
Female	18.3	2,800	42.9	513
Birth order				
1	17.5	1,075	52.9	188
2-3	17.5	2,002	45.6	351
4-5	19.5	1,269	33.2	248
6+	21.2	1,402	44.1	297
Residence				
Total urban	13.0	1,931	56.7	250
Asmara	11.4	810	60.7	92
Other towns	14.1	1,121	54.3	158
Rural	21.8	3,817	39.7	833
Zoba				
Debubawi Keih Bahri	7.9	174	41.1	14
Maekel	12.3	1,069	61.5	131
Semenawi Keih Bahri	19.4	778	40.3	151
Anseba	17.1	877	32.7	150
Gash-Barka	21.3	1,039	57.2	221
Debub	22.9	1,811	36.0	416
Mother's education				
No education	21.0	3,620	39.4	760
Primary	19.1	1,048	54.3	200
Middle	14.3	380	(48.7)	54
Secondary +	9.9	700	(54.9)	69
Wealth index				
Lowest	24.9	1,025	32.8	256
Second	18.7	1,280	41.7	239
Middle	22.2	1,234	43.1	274
Fourth	14.9	1,097	50.1	163
Highest	12.6	926	63.3	117
Total	18.9	5,748	43.6	1,083

Note: Figures in parentheses are based on 25-49 unweighted cases.
ARI = Acute respiratory infection
[1] Excludes pharmacy, shop and traditional practitioner

9.8 FEVER

Fever is a major manifestation of malaria, although it also accompanies other illnesses. Malaria contributes to high levels of malnutrition and mortality in children. People most at risk to malaria are children and pregnant women. While fever can occur all year round, malaria is more prevalent after the end of the rainy season. Therefore, temporal factors need to be considered when interpreting fever as an indicator of malaria. Presumptive treatment of fever with antimalarial drugs is advocated where malaria is endemic.

Mothers were asked for each child under five whether the child had fever any time in the two weeks prior to the survey. If fever was reported, the mother was asked whether any drugs were given for treatment of fever. Table 9.14 shows that 30 percent of children under five had fever during the reference period. The peak ages for fever among children under five are from 6 to 23 months, a pattern similar to that of ARI. Fever is lowest in children under six months of age and shows a progressive reduction starting at age 24-35 months. The prevalence of fever is higher in rural areas (33 percent) than urban areas (24 percent). By zoba, it is highest in zobas Semenawi Keih Bahri and Debub (33 percent each) and lowest in zoba Maekel (21 percent). The likelihood of children getting fever is negatively related to mother's level of education and household wealth. Prevalence is twice as high for children whose mothers have no schooling as for children whose mothers have some secondary school education.

Table 9.14 shows that only 4 percent of children with fever were treated with antimalarial medications, mostly chloroquine. About 2 percent of children started this treatment on either the day they got the fever or the following day.

9.9 DIARRHEAL DISEASES

Unhygienic practices of food preparation and excreta disposal, and use of contaminated drinking water are well known causative factors for diarrheal diseases.

Dehydration caused by severe diarrhea is a major cause of death among young children in Eritrea. Dehydration due to diarrhea is easily preventable and can be treated effectively by a prompt increase in the child's fluid intake through food and oral rehydration therapy (ORT), that is, administration of a solution prepared from oral rehydration salts (ORS) and water, or a homemade solution prepared from sugar, salt, and water (recommended home fluid). ORS packets are available in health institutions and pharmacies. Families should also be encouraged to feed the child well during episodes of diarrhea.

Table 9.15 shows the prevalence of diarrheal disease in children under five year of age, according to background characteristics. Thirteen percent of children under five experienced diarrhea at some time in the two weeks preceding the survey. The prevalence of diarrhea is highest among children age 12-23 months (23 percent). Thereafter, the risk of diarrhea decreases with increasing age of the child.

Boys are more likely than girls to have diarrhea. Among zobas, diarrhea prevalence ranges from 7 percent in zoba Debubawi Keih Bahri to 18 percent in zoba Debub. Diarrhea is more common among rural children than urban children. The mother's education, household wealth, and source of drinking water are other factors that affect the prevalence of diarrhea. The higher the mother's education and wealth, the less likely her child is to have diarrhea in the two weeks before the survey. Children living in households with access to piped drinking water are the least likely to have diarrhea, while children in households using surface water are the most likely to have diarrhea.

Table 9.14 Prevalence and treatment of fever

Percentage of children under five years with fever in the two weeks preceding the survey, and percentage of children with fever who were treated with any antimalarial drugs, and specific types of drugs taken, by background characteristics, Eritrea 2002

	Prevalence of fever		Treatment of fever					
Background characteristic	Percentage of children with fever	Number of children	Fansidar given	Chloro-quine given	Quinine given	Any antimalarial given	Took antimalarial same/next day	Number of children with fever
Age in months								
<6	19.3	660	0.0	0.8	0.0	0.8	0.0	128
6-11	44.8	621	0.5	0.2	0.4	1.2	0.9	278
12-23	42.9	959	0.8	5.3	0.8	6.5	2.3	411
24-35	31.4	1,042	0.6	2.6	1.5	4.7	3.1	327
36-47	24.2	1,205	0.0	2.4	0.4	2.7	1.5	292
48-59	22.0	1,262	0.5	1.0	1.2	2.7	1.3	278
Sex								
Male	30.5	2,948	0.5	3.4	0.4	4.2	2.1	900
Female	29.1	2,800	0.4	1.3	1.2	2.9	1.4	814
Residence								
Total urban	24.2	1,931	0.3	2.8	0.9	4.0	2.1	467
Asmara	19.3	810	0.0	4.2	0.8	5.0	2.6	156
Other towns	27.7	1,121	0.4	2.1	1.0	3.5	1.9	311
Rural	32.7	3,817	0.6	2.3	0.8	3.5	1.6	1,247
Zoba								
Debubawi Keih Bahri	32.3	174	0.0	0.0	0.0	0.0	0.0	56
Maekel	20.8	1,069	0.5	4.7	0.6	5.8	3.2	222
Semenawi Keih Bahri	32.7	778	0.0	0.7	0.0	0.7	0.3	254
Anseba	31.2	877	0.7	0.9	3.5	4.4	3.2	273
Gash-Barka	30.5	1,039	0.7	4.4	0.5	5.6	2.5	316
Debub	32.6	1,811	0.5	2.3	0.2	3.0	1.0	591
Mother's Education								
No education	33.1	3,620	0.5	1.9	0.8	3.1	1.2	1,197
Primary	29.6	1,048	0.7	4.0	1.3	5.8	2.9	310
Middle	21.2	380	0.0	3.1	0.0	3.1	3.1	81
Secondary +	17.9	700	0.0	3.2	0.0	3.2	3.2	126
Wealth index								
Lowest	35.9	1,025	0.3	1.5	0.7	2.4	0.4	368
Second	32.8	1,280	0.6	1.8	1.2	3.3	1.6	420
Middle	30.7	1,234	0.7	2.5	1.0	4.2	2.7	378
Fourth	28.3	1,097	0.7	4.9	0.5	5.8	3.2	311
Highest	19.7	926	0.0	0.9	0.7	1.5	0.9	182
Total	29.8	5,748	0.5	2.4	0.8	3.6	1.8	1,714

Table 9.15 Prevalence of diarrhea

Percentage of children under five years with diarrhea in the two weeks preceding the survey, by background characteristics, Eritrea 2002

Background characteristic	Diarrhea in the two weeks preceding the survey	Number of children
Age in months		
<6	7.1	660
6-11	20.4	621
12-23	22.6	959
24-35	16.1	1,042
36-47	9.2	1,205
48-59	7.2	1,262
Sex		
Male	14.6	2,948
Female	11.8	2,800
Residence		
Total urban	10.7	1,931
Asmara	9.0	810
Other towns	11.9	1,121
Rural	14.5	3,817
Zoba		
Debubawi Keih Bahri	7.3	174
Maekel	9.2	1,069
Semenawi Keih Bahri	15.0	778
Anseba	10.1	877
Gash-Barka	12.1	1,039
Debub	17.5	1,811
Mother's education		
No education	14.0	3,620
Primary	14.0	1,048
Middle	10.3	380
Secondary +	9.7	700
Source of drinking water		
Piped	10.2	1,892
Protected well	13.3	1,033
Open well	15.0	983
Surface	17.7	1,131
Other/missing	11.3	709
Wealth index		
Lowest	15.3	1,025
Second	12.8	1,280
Middle	13.7	1,234
Fourth	13.8	1,097
Highest	9.2	926
Total	13.2	5,748

Knowledge about ORS

A major component of ORT is the early administration of a solution prepared from ORS packets to prevent dehydration. To assess knowledge of ORS, women who had at least one birth in the five years preceding the survey were asked whether they knew about ORS packets. The results in Table 9.16 show that almost all mothers know about ORS packets (96 percent) with almost no variation by background characteristics.

Table 9.16 Knowledge of ORS packets

Percentage of women with births in the five years preceding the survey who know about ORS packets for treatment of diarrhea in children, by background characteristics, Eritrea 2002

Background characteristic	Percentage of mothers who know about ORS packets	Number of mothers
Age		
15-19	92.9	220
20-24	93.6	760
25-29	96.8	1,052
30-34	97.4	800
35-49	96.8	1,343
Residence		
Total urban	97.1	1,448
Asmara	95.1	618
Other towns	98.6	830
Rural	95.6	2,727
Zoba		
Debubawi Keih Bahri	98.3	136
Maekel	96.0	801
Semenawi Keih Bahri	96.9	560
Anseba	97.8	589
Gash-Barka	95.0	789
Debub	95.6	1,301
Education		
No education	95.6	2,581
Primary	97.5	766
Middle	96.0	293
Secondary +	96.8	534
Wealth index (quintile)		
Lowest	94.9	744
Second	95.6	903
Middle	96.8	890
Fourth	97.8	795
Highest	95.3	697
Total	96.1	4,175

ORS = Oral rehydration salts

Treatment of Diarrhea

Forty-two percent of children who had diarrhea in the two weeks before the survey were taken to health providers (Table 9.17). Children age 12-23 months are most likely to be taken for treatment, followed by children age 6-11 months and age 24-35 months. Around half the children with diarrhea in zobas Maekel and Gash-Barka were taken to health provider for treatment, compared with one-third of children in zobas Anseba and Semenawi Keih Bahri.

Overall, more than two-thirds of children with diarrhea received some kind of oral rehydration therapy: ORS (45 percent), recommended home fluids (28 percent), or increased fluids (38 percent). Other types of treatments were less common—pills or syrup (20 percent) and home remedies (11 percent). More than one-fourth of children with diarrhea were given neither ORT nor any other type of

Table 9.17 Diarrhea treatment

Percentage of children under five years of age who had diarrhea in the two weeks preceding the survey taken for treatment to a health provider, percentage who received oral rehydration therapy (ORT), and percentage given other treatments, according to place of residence, Eritrea 2002

Background characteristic	Percentage taken to a health provider[1]	Oral rehydration therapy (ORT)					Other treatments						Number of children with diarrhea
		ORS packets	RHF	Either ORS or RHF	Increased fluids	ORS,RHF or increased fluids	Pill or syrup	Injection	Intravenous solution	Home remedy/ other	Missing	No treatment	
Age in months													
<6	(25.2)	(12.6)	(11.4)	(24.0)	(13.0)	(34.5)	(10.9)	(0.0)	(0.0)	(0.0)	(0.0)	(58.7)	47
6-11	46.1	41.2	19.8	49.0	34.8	59.8	22.4	0.0	0.0	8.9	0.0	36.6	127
12-23	51.0	55.7	26.9	63.6	43.9	76.5	21.3	2.4	0.4	10.1	0.0	18.9	216
24-35	44.0	48.7	34.6	57.9	40.0	68.6	20.7	0.6	0.0	10.9	0.0	24.1	168
36-47	33.4	33.5	29.1	52.2	35.0	68.1	21.1	2.2	0.0	10.4	1.0	26.1	110
48-59	29.0	46.0	35.9	62.7	43.2	78.7	16.1	1.2	0.0	23.3	0.0	17.4	90
Sex													
Male	42.4	45.2	26.5	55.5	43.9	71.8	22.3	1.5	0.0	11.7	0.2	22.9	430
Female	41.2	43.9	29.6	55.9	30.9	64.0	17.2	1.0	0.3	10.3	0.0	30.9	329
Residence													
Total urban	43.7	58.9	31.2	69.6	49.4	81.2	20.0	1.0	0.5	9.1	0.0	15.2	207
Asmara	48.0	66.7	37.6	77.1	60.5	91.9	18.5	0.0	1.3	11.5	0.0	8.1	73
Other towns	41.3	54.6	27.6	65.5	43.4	75.4	20.8	1.5	0.0	7.8	0.0	19.1	134
Rural	41.2	39.3	26.6	50.5	34.1	63.6	20.1	1.4	0.0	11.8	0.2	30.5	552
Zoba													
Debubawi Keih Bahri	35.6	43.1	14.5	47.1	34.9	58.6	18.1	1.7	0.0	1.6	0.0	37.7	13
Maekel	51.3	65.3	39.9	75.8	47.7	86.8	17.7	0.0	1.0	10.3	1.1	10.9	98
Semenawi Keih Bahri	33.2	49.9	28.7	64.4	43.5	78.1	15.2	0.8	0.0	9.7	0.0	18.4	117
Anseba	33.2	43.2	18.4	51.3	45.5	66.2	19.1	1.9	0.0	9.0	0.0	29.6	89
Gash-Barka	49.1	49.0	26.2	57.7	52.3	72.6	26.1	2.2	0.0	17.0	0.0	19.9	126
Debub	41.9	35.0	27.7	47.1	25.9	58.5	20.6	1.2	0.0	10.4	0.0	35.2	317
Mother's education													
No education	39.5	40.0	25.2	51.0	34.7	64.6	18.7	1.5	0.0	11.1	0.2	30.0	505
Primary	47.0	47.7	31.2	59.7	37.3	70.4	20.3	0.8	0.7	9.9	0.0	25.5	147
Middle	48.6	71.7	28.0	71.7	48.1	77.5	27.4	2.5	0.0	5.5	0.0	18.7	39
Secondary +	44.4	57.6	40.2	73.2	61.2	87.5	25.9	0.0	0.0	16.6	0.0	4.9	68
Total	41.9	44.7	27.9	55.7	38.2	68.4	20.1	1.3	0.1	11.1	0.1	26.3	759

Note: Oral rehydration therapy (ORT) includes solution prepared from oral rehydration salt (ORS) packets, recommended home fluids (RHF), and increased fluids. Figures in parentheses are based on 25-49 unweighted cases.
[1] Excludes pharmacy, shop and traditional practitioner

treatment. Thirty percent or more of children with diarrhea in rural areas and in zobas Debub and Debubawi Keih Bahri did not get any treatment. Mother's education is positively related to seeking treatment for children with diarrhea.

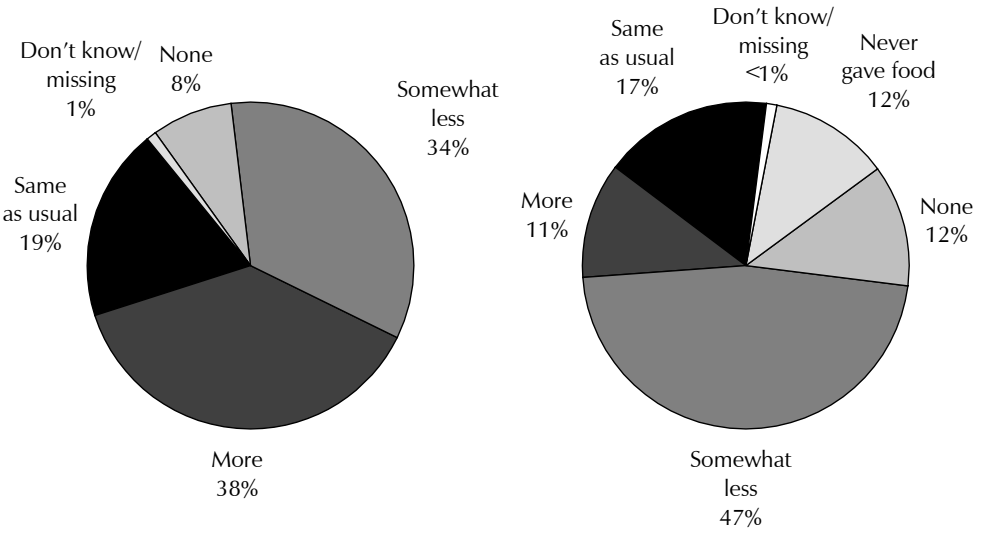
Children in urban areas (81 percent) are more likely to receive some type of ORT than children in rural areas (64 percent) and children of educated mothers are more likely to receive ORT than children of less-educated mothers. Slightly less than 60 percent of children in zobas Debub and Debubawi Keih Bahri compared with 87 percent in zoba Maekel received ORT for treatment of diarrhea.

Feeding Practices During Diarrhea

It is recommended that children be given more liquids to drink during diarrhea and that food intake not be reduced. Mothers of children who had diarrhea in the two weeks before the survey were asked about feeding practices during their children's illness. Figure 9.2 shows that 19 percent of children who had diarrhea were given the same amount of liquids as usual and 38 percent were given more liquids than usual. On the other hand, more than four in ten children were given less than the usual amount of liquids to drink or no liquids at all.

Only 28 percent of children with diarrhea received either the same amount of food as usual or more during their illness. Forty-seven percent of children received less food and 12 percent were not given anything to eat when they had diarrhea.

Figure 9.2
Feeding Practices During Diarrhea Compared to Normal Practice



EDHS 2002

9.10 WOMEN'S STATUS AND CHILD HEALTH CARE

A woman's social status and self-respect can be a major determinant of her ability to obtain adequate health care for herself and her children. Table 9.18 shows the proportion of children age 12-23 months who have been fully immunized, and the proportions of children with ARI and diarrhea in the two

Table 9.18 Children's health care by women's status

Percentage of children age 12-23 months who are fully vaccinated, and percentage of children under five years who were ill with symptoms of acute respiratory infection (ARI) and diarrhea in the two weeks preceding the survey who were taken to a health provider for treatment, by women's status indicators, Eritrea 2002

	Children age 12-23 months		Children under five years with symptoms of ARI		Children under five years with diarrhea	
Women's status indicator	Percentage of children fully vaccinated[1]	Number of children	Percentage of children taken to a health provider[2]	Number of children	Percentage of children taken to a health provider[2]	Number of children
Number of decisions in which woman has final say[3]						
0	68.6	35	(44.1)	26	(34.8)	19
1-2	71.1	190	43.3	210	33.4	140
3-4	74.3	264	46.4	326	42.3	225
5-6	79.3	470	42.0	521	45.1	375
Number of reasons wife beating is justified						
0	80.0	281	49.4	191	45.7	143
1-2	80.3	206	46.2	313	46.4	187
3-4	71.7	282	44.0	318	41.9	252
5	71.4	190	35.8	262	33.8	177
Total	75.9	959	43.6	1,083	41.9	759

Note: Figures in parentheses are based on 25-49 unweighted cases.
[1] Those who have received BCG, measles and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth)
[2] Excludes pharmacy, shop and traditional practitioner
[3] Either by herself or jointly with others

weeks preceding the survey who were taken to a health facility for treatment, according to two indicators of women's empowerment. The first indicator is the number of decisions in which the woman has the final say by herself or jointly with someone else, ranging from 0 to 6 (see Table 3.15 for the list of decisions). The indicator is positively related to women's empowerment and reflects the degree of control women are able to exercise in areas that affect them and their environment. The second indicator is the number of specific situations in which the respondent thinks a husband is justified in beating his wife, ranging from 0 to 5 (see Table 3.16 for the list of reasons). A lower score on this indicator is interpreted as reflecting a greater sense of entitlement and self-esteem for women, and higher status.

Table 9.18 shows that women's participation in decisionmaking and children's immunization status are positively related. Women who participate in more decisions are more likely to have fully vaccinated children, but the differences are small. The relationship between this women's status indicator and treatment-seeking behavior for sick children does not show consistent results. There is no relationship between decisionmaking power and seeking treatment for children with ARI from health providers. However, the proportion of children sick with diarrhea who were taken to a health provider increases as women's participation in decisionmaking increases.

The table shows that there is a negative relationship between each of the three variables for children's health and women's status in terms of the number of situations in which women consider it justifiable for a husband to beat his wife. For example, almost half of children with ARI whose mothers

regard wife beating as not justified under any circumstances were taken to a health facility, compared with only 36 percent of children whose mothers consider wife beating justified in all five situations.

9.11 USE OF MOSQUITO NETS BY CHILDREN

In Chapter 2 it was mentioned that 34 percent of households in Eritrea have mosquito nets (Table 2.11). By residence, ownership of mosquito nets is higher in rural areas (37 percent) than urban areas (29 percent), and it is highest in small towns (45 percent). Because malaria-causing mosquitoes vary by season—with a peak during and immediately following periods of rain—use of mosquito nets may be expected to follow a similar seasonal pattern. Since the survey was conducted mostly before the rainy season, from the last week of March to the first week of July 2002, estimates of mosquito net use reflect the dry season levels.

Table 9.19 shows the percentage of children under five who slept under a mosquito net the night before the interview. Mothers reported that 12 percent of children slept under a mosquito net the previous night; 4 percent of children had insecticide-treated mosquito nets (ITNs). The use of ITNs decreases with increasing age of child from 7 percent for children under one year to 3 percent for children 2-4 years old. The use of ITNs for children is higher in other towns (8 percent) than in rural areas, in zoba Semenawi Keih Bahri (8 percent) than in other zobas. It is surprising that only 9 percent of children in zoba Gash-Barka used a mosquito net the night before the survey (3 percent ITNs), since the zoba has the highest percentage of households owning mosquito nets.

Table 9.19 Use of mosquito nets by children

Percentage of children under five who slept under any mosquito net (treated or untreated) and percentage who slept under an insecticide-treated net (ITN) the night before the survey, by background characteristics, Eritrea 2002

Background characteristic	Slept under a mosquito net[1]	Slept under an ITN[2]	Number of children
Child's age in months			
< 12	17.4	7.0	1,281
12-23	12.7	4.7	959
24-35	10.8	3.1	1,042
36-47	10.1	3.4	1,205
48-59	9.2	2.8	1,262
Sex			
Male	11.8	4.3	2,948
Female	12.4	4.1	2,800
Residence			
Total urban	14.3	4.8	1,931
Asmara	5.2	0.6	810
Other towns	20.9	7.8	1,121
Rural	11.0	4.0	3,817
Zoba			
Debubawi Keih Bahri	7.7	2.1	174
Maekel	6.2	0.7	1,069
Semenawi Keih Bahri	19.6	8.1	778
Anseba	14.4	4.5	877
Gash-Barka	8.6	3.0	1,039
Debub	13.8	5.4	1,811
Total	12.1	4.2	5,748

Note: Excludes children whose mothers were not interviewed.
[1] Includes ITNs
[2] Mosquito net either bought or treated with insecticide during the six months preceding the interview

9.12 WOMEN'S PERCEPTION OF PROBLEMS IN ACCESSING HEALTH CARE

Many factors can be barriers to a woman seeking health care for herself. In the 2002 EDHS, women age 15-49 were asked whether they thought certain issues or circumstances pose a "big problem" when they want to get treatment for an illness. Table 9.20 shows the percentage of women who reported specific problems in accessing health care for themselves, according to background characteristics. Seventy-two percent of women reported at least one issue or circumstance as a big problem. The major constraints to women's access to health services are lack of money and physical access to health facilities. Almost half of the respondents (47 percent) reported that getting money for treatment is a big problem; four in ten women said that the health facility was far away; and four in ten said that taking transportation to the health facility was a big problem. It is not surprising that these problems are felt most acutely by

Table 9.20 Problems in accessing health care

Percentage of women who reported they have big problems in accessing health care for themselves when they are sick, by type of problem and background characteristics, Eritrea 2002

Background characteristic	Problems in accessing health care										
	Knowing where to go for treatment	Getting permission to go for treatment	Getting money for treatment	Distance to health facility	Having to take transport	Not wanting to go alone	Concerned there may not be a female provider	Queuing in line for treatment	Quality of the health services	Any of the specified problems	Number of women
Age											
15-19	11.1	10.3	35.7	33.3	37.8	31.2	14.1	35.0	14.3	69.2	2,001
20-29	10.2	10.7	44.8	37.7	41.5	28.7	14.6	38.3	15.4	70.1	2,998
30-39	10.5	11.1	51.8	40.5	44.1	28.0	15.5	40.2	16.9	73.9	2,194
40-49	12.0	10.7	59.7	43.1	49.5	29.9	17.3	40.4	18.7	78.5	1,561
Number of living children											
0	11.1	11.1	35.9	32.9	36.8	30.0	14.3	34.8	15.1	67.3	3,019
1-2	9.5	9.2	47.2	38.2	42.9	27.7	15.1	39.7	16.1	71.5	2,287
3-4	11.0	11.1	55.6	40.2	44.6	26.8	15.1	38.7	17.0	75.1	1,772
5+	11.9	11.4	58.5	46.5	51.2	32.9	17.0	42.9	17.1	79.5	1,677
Marital status											
Never married	9.3	9.4	32.8	27.0	31.0	25.3	10.9	31.8	13.2	63.0	2,044
Married or living together	11.6	11.5	49.7	42.9	47.0	31.4	17.0	41.3	17.3	74.8	5,733
Divorced, separated, widowed	9.3	8.6	61.8	35.3	41.8	25.5	13.3	35.1	15.2	77.1	977
Residence											
Total urban	5.1	4.4	32.0	14.3	16.7	13.4	4.6	27.7	10.8	54.9	3,767
Asmara	4.9	3.9	24.5	10.8	12.4	12.3	2.8	23.1	10.1	47.8	1,899
Other towns	5.3	4.9	39.6	17.7	21.0	14.5	6.4	32.3	11.6	62.2	1,868
Rural	15.1	15.4	58.6	56.6	62.4	41.3	23.2	46.5	20.1	85.4	4,987
Zoba											
Debubawi Keih Bahri	10.9	13.6	38.6	37.6	43.3	39.2	36.5	43.8	35.8	66.8	324
Maekel	5.2	4.4	27.5	14.7	17.3	13.4	3.6	22.9	10.5	51.2	2,264
Semenawi Keih Bahri	13.7	13.9	54.1	48.5	51.0	40.3	27.8	54.4	21.9	81.6	1,148
Anseba	8.3	12.3	53.2	51.7	54.5	35.5	19.9	36.9	18.2	77.5	1,130
Gash-Barka	17.4	21.5	55.4	49.2	55.5	39.8	25.7	46.1	22.1	82.3	1,500
Debub	11.8	7.1	55.4	42.9	49.1	28.2	8.3	40.5	11.3	79.9	2,388
Education											
No education	16.4	16.2	62.2	53.9	58.9	41.1	24.6	48.2	20.1	85.0	4,384
Primary	7.1	6.3	44.0	33.4	37.6	24.1	8.6	33.7	13.8	71.9	1,637
Middle	5.2	4.3	33.2	21.9	25.4	19.6	6.5	27.1	10.8	59.2	974
Secondary +	3.5	4.5	20.2	13.4	16.8	10.1	2.6	24.6	11.3	48.2	1,760
Employment											
Not employed	12.2	12.2	49.1	41.5	45.3	31.8	17.5	40.3	17.1	74.7	6,670
Working for cash	5.4	5.9	38.7	23.9	28.8	16.5	5.6	28.9	11.9	62.3	1,510
Not working for cash	8.5	5.5	47.2	39.8	49.9	34.5	13.9	40.9	16.2	71.6	571
Wealth index											
Lowest	18.6	20.5	61.5	63.8	70.1	50.5	29.2	49.8	23.0	88.5	1,344
Second	15.8	16.5	60.3	57.1	62.6	41.9	25.3	47.1	19.8	84.9	1,626
Middle	13.4	12.0	56.0	50.5	57.1	36.2	18.9	47.1	19.3	83.8	1,659
Fourth	5.8	4.5	41.3	23.7	26.1	15.7	5.5	30.8	10.6	65.2	1,806
Highest	4.1	3.8	25.6	10.1	11.8	11.2	3.4	23.8	10.5	49.4	1,978
Total	10.8	10.7	47.1	38.4	42.7	29.3	15.2	38.4	16.1	72.3	8,754

rural women, older women, women with large families, and women in the least wealthy households. At least half of women in all zobas except Maekel and Debubawi Keih Bahri mentioned money constraints, distance to the health facility, and having to take transport. Eleven percent of women in Eritrea do not know where to go for health care.

For three potential problems associated with quality of care, women cited them in order of frequency as: waiting in line at the health facility (38 percent), the quality of health services (16 percent), and concern that a female health provider might not be available at the health facility (15 percent). Queuing in line is mentioned more often by rural women than urban women, and by less educated women than educated women. Rural women, less educated women, and women in less wealthy households are more concerned with the quality of health services and more concerned that a female health provider might not be available at the health facility than other women. By zoba, the problem of queuing in line is more frequently mentioned in Semenawi Keih Bahri and Gash-Barka; concern about the quality of health services is reported most in zoba Debubawi Keih Bahri.

Reporting personal reasons that hinder access to health facilities is less common. Three in ten women report that they do not want to go to a health provider alone. Eleven percent of women say that needing "permission" to seek health care is a big problem, which is consistent with the results in Table 3.15 on women's decisionmaking about health care for themselves.

INFANT FEEDING AND NUTRITIONAL STATUS OF CHILDREN AND WOMEN

10

Malnutrition is one of the most important health and welfare problems facing Eritrea today. Young children and women of reproductive age are especially vulnerable to nutritional deficits and micronutrient deficiency disorders. Evidence also suggests that life expectancy is directly related to poverty and nutrition (Sachs, 1999). The 2002 EDHS survey collected data from mothers on the feeding patterns of their children under five years of age. In this chapter, these data are used to evaluate infant feeding practices, including breastfeeding duration, introduction of complementary foods, and use of feeding bottles with nipples. Other important nutritional issues that pertain to micronutrients—vitamin A and iron supplements, and use of iodized salt—are also discussed. The last two sections present nutritional status data based on anthropometric indices (height and weight measures) of all children under five years of age and all women age 15-49.

10.1 BREASTFEEDING AND COMPLEMENTARY FEEDING

The pattern of infant feeding has important effects on both the child and the mother. Feeding practices are the underlying determinant of children's nutritional status. Appropriate feeding practices are of fundamental importance for the survival, growth, development, health, and nutrition of infants and children, and for the well-being of mothers. Poor nutrition in young children exposes them to greater risk of illness and death. Breastfeeding also affects mothers through the physiological suppression of the return to fertile status, thereby affecting the length of interval between pregnancies. These effects are influenced by both the duration and frequency of breastfeeding, and by the age at which the child receives foods and liquids to complement breast milk.

Prevalence and Initiation of Breastfeeding

The initiation of breastfeeding immediately after childbirth is important because it benefits both the mother and the infant. As soon as the infant starts suckling at the breast, the hormone oxytocin is released in the mother, resulting in uterine contractions that facilitate the expulsion of the placenta and reduce the risk of postpartum hemorrhage. Early initiation also encourages bonding between the mother and newborn, and helps to maintain the baby's body temperature.

Breast milk is sufficient for newborn infants; it is not necessary to give them anything else. It is also recommended that the first breast milk should be given to the child because it contains colostrum, which provides natural immunity to the child and protects the child from infections before the child's immune system has matured. Prelacteal feeding (giving something other than breast milk in the first three days of life) is discouraged because it inhibits breastfeeding and exposes the newborn to illness. Contaminants may cause infection, leading to diarrhea and other diseases.

Table 10.1 shows that breastfeeding is nearly universal in Eritrea, with 98 percent of children born in the five years before the survey having been breastfed. There are no marked differences in the proportion of children ever breastfed by background characteristics.

Overall, 78 percent of children are breastfed within an hour of delivery and 90 percent within the first 24 hours after delivery; these rates of early initiation of breastfeeding are among the highest in sub-Saharan countries. Variations among population subgroups are minimal, but certain characteristics are

Table 10.1 Initial breastfeeding

Percentage of children born in the five years preceding the survey who were ever breastfed, and among children ever breastfed, the percentage who started breastfeeding within one hour and within one day of birth, and percentage who received a prelacteal feed, by background characteristics, Eritrea 2002

Background characteristic	All children		Among children ever breastfed, percentage who started breastfeeding:		Percentage of children who received a prelacteal feed[2]	Number of children ever breastfed
	Percentage ever breastfed	Number of children	Within one hour of birth	Within one day of birth[1]		
Sex						
Male	97.6	3,186	77.1	88.1	17.7	3,110
Female	98.3	2,969	78.7	90.9	16.7	2,920
Residence						
Urban	98.0	2,030	85.7	94.7	6.8	1,989
Asmara	97.6	844	86.6	94.0	4.8	824
Other towns	98.3	1,186	85.1	95.1	8.2	1,166
Rural	97.9	4,125	74.0	86.9	22.3	4,040
Zoba						
Debubawi Keih Bahri	93.7	195	81.2	89.9	33.1	183
Maekel	98.0	1,118	84.1	92.1	6.4	1,096
Semenawi Keih Bahri	98.1	845	82.3	94.7	15.5	830
Anseba	99.0	911	88.8	95.6	11.5	902
Gash-Barka	97.4	1,136	77.7	88.5	19.7	1,106
Debub	98.1	1,950	67.1	83.3	23.9	1,913
Mother's education						
No education	98.4	3,909	75.4	87.9	21.5	3,846
Primary	97.2	1,118	80.3	91.1	12.0	1,087
Middle	97.0	399	83.6	93.7	9.1	388
Secondary +	97.4	729	84.4	93.0	6.6	709
Wealth index						
Lowest	98.2	1,333	77.9	90.1	19.5	1,309
Second	98.4	1,303	71.6	85.0	26.7	1,283
Middle	97.5	1,284	73.1	85.7	21.0	1,252
Fourth	97.7	1,258	82.9	93.2	9.8	1,229
Highest	97.9	977	86.2	94.5	5.9	957
Assistance at delivery						
Health professional[3]	97.5	1,742	86.3	94.1	6.0	1,697
Traditional birth attendant	98.0	2,663	79.3	91.5	19.0	2,609
Other	98.4	1,688	68.9	83.6	26.1	1,662
Place of delivery						
Health facility	97.2	1,621	86.5	94.3	6.2	1,576
At home	98.2	4,482	75.5	88.5	21.2	4,401
Total	98.0	6,156	77.9	89.5	17.2	6,029

Note: Table is based on all births whether the children are living or dead at the time of interview. Total includes 24 children who had no assistance at birth and 37 children for whom information was missing on assistance at delivery. Total also includes 15 children who were delivered in places other than health facility or home, and 38 children with missing information on place of delivery.

[1] Includes children who started breastfeeding within one hour of birth

[2] Children given something other than breast milk during the first three days of life before the mother started breastfeeding regularly.

[3] Doctor, nurse/midwife, or auxiliary midwife

associated with lower likelihood of a child being put to the breast within an hour of delivery. Residence in zoba Debub and use of non-medically trained personnel at delivery are associated with a lower likelihood of initiating breastfeeding within an hour of delivery.

Prelacteal feeding is not widely practiced in Eritrea. Only one in six newborns receives a prelacteal feed. The practice is more prevalent in rural areas (22 percent) than urban areas and in zobas Debubawi Keih Behari and Debub than other zobas. Children of uneducated mothers and less wealthy mothers are more likely to receive prelacteal feeds. Some delivery characteristics are related to the practice of prelacteal feeding of newborns. Infants are more likely to receive prelacteal feeds when they are delivered at home and when delivery is not assisted by a health professional or a TBA.

10.2 AGE PATTERN OF BREASTFEEDING

Breast milk is the primary source of nutrients for infants. Children who are *exclusively* breastfed receive only breast milk. The World Health Organization (WHO) recommends that during the first six months of life, children should be exclusively breastfed and that they should be given solid or mushy complementary foods starting at six months of age (WHO, 1998). Supplementing breast milk with other foods before six months is strongly discouraged because of the possible introduction of disease-causing agents. To obtain information on feeding patterns, mothers interviewed in the 2002 EDHS were asked about breastfeeding patterns in the 24-hour period before the survey for all children under the age of three and whether other liquids or foods were given to the child during the period.

Table 10.2 shows the percent distribution of youngest children under three living with the mother by breastfeeding status, according to child's age in months. The table indicates that almost all children are breastfed for at least one year; at two years of age 62 percent of children are still breastfeeding. Thereafter, breastfeeding declines rapidly so that by age 28-31 months only one-fifth of children are still breastfed.

Despite the universal prevalence of breastfeeding of newborns in Eritrea, the majority of infants are not fed in compliance with WHO/UNICEF recommendations. Exclusive breastfeeding, which should continue until age six months, is common but not universal in early infancy in Eritrea. Although 79 percent of children under two months are exclusively breastfed, this proportion falls to slightly more than half for children 2-3 months (53 percent) and to one in four (26 percent) among those 4-5 months of age. The reason that prevalence of exclusive breastfeeding at young ages is not higher is early supplementation of breast milk with plain water. Sixteen percent of children under two months and almost one-third of children 2-3 months receive water and breast milk. In addition to water, other supplements are introduced at a fairly early age: 5 percent of children under two months receive water-based liquids and other milk (cow's or goat's) in addition to breast milk. Fifteen percent of children 2-3 months receive breast milk and these two supplements. At age 6-9 months, when children should be receiving both breast milk and solid or mushy foods, only 43 percent are receiving breast milk and complementary foods, while almost one-third are receiving breast milk or breast milk and water only.

Infant formula, even if correctly prepared, does not adequately substitute for breast milk. Moreover, formula is often mixed incorrectly, leading to undernutrition among infants. The use of a bottle with a nipple regardless of the content (formula or any other liquid) requires attention in terms of hygiene and handling. Because of inadequate and insufficient cleaning and ease of contamination after cleaning, the nipple may house disease-causing agents. Fortunately, in Eritrea bottle-feeding is relatively uncommon. Less than 10 percent of children in any age group drink from a bottle with a nipple.

Table 10.2 Breastfeeding status by child's age

Percent distribution of youngest children under three years living with the mother by breastfeeding status and percentage of children under three years using a bottle with a nipple, according to age in months, Eritrea 2002

Age in months	Not breast-feeding	Exclu-sively breast-fed	Breastfeeding and consuming: Plain water only	Water-based liquids/ juice	Other milk	Comple-mentary foods	Total	Number of children	Using a bottle with a nipple[1]	Number of living children
<2	0.0	79.4	15.8	2.5	2.3	0.0	100.0	196	3.9	200
2-3	0.1	53.1	30.9	11.2	4.0	0.6	100.0	239	0.9	242
4-5	0.1	25.8	39.3	14.6	10.3	9.9	100.0	217	6.7	217
6-7	1.9	13.1	26.5	18.2	7.3	33.0	100.0	220	8.9	222
8-9	2.1	3.8	19.1	15.7	6.0	53.3	100.0	196	8.7	200
10-11	3.8	4.8	12.1	7.2	4.5	67.6	100.0	194	8.2	199
12-15	8.1	3.5	5.8	4.9	5.0	72.8	100.0	351	7.5	358
16-19	14.9	1.4	0.7	2.5	0.7	79.7	100.0	301	7.8	313
20-23	38.3	3.1	1.9	2.6	0.2	54.0	100.0	270	4.8	287
24-27	62.1	0.1	0.4	1.0	0.6	35.8	100.0	352	5.7	433
28-31	79.3	1.1	0.3	3.0	0.0	16.3	100.0	202	4.6	296
32-35	86.9	0.0	0.0	0.0	0.2	12.8	100.0	195	3.6	312
<6	0.0	52.0	29.2	9.7	5.6	3.5	100.0	651	3.7	660
6-9	2.0	8.8	23.0	17.0	6.7	42.5	100.0	416	8.8	422

Note: Breastfeeding status refers to a "24-hour" period (yesterday and last night). Children classified as *breastfeeding and consuming plain water only* consume no supplements. The categories of not breastfeeding, exclusively breastfed, breast-feeding and consuming plain water, water-based liquids/juice, other milk, and complementary foods (solids or semi-solids or both) are hierarchical and mutually exclusive, and their percentages add to 100 percent. Thus children who receive breast milk and water-based liquids and who do not receive complementary foods are classified in the water-based liquid category even though they may also get plain water. Any children who get complementary food are classified in that category as long as they are breastfeeding as well.

[1] Based on all children under three years

10.3 DURATION AND FREQUENCY OF BREASTFEEDING

Table 10.3 presents information on the median duration of any breastfeeding, exclusive breastfeeding, and predominant breastfeeding among children under three years of age. It also provides information on the percentage of children below six months of age who are breastfed six or more times in a 24-hour period. At the national level, the median duration of any breastfeeding is 22 months, which has remained unchanged since 1995. The median duration of exclusive breastfeeding is three months and the median duration of predominant breastfeeding (breastfeeding exclusively or with plain water, water-based liquids, or juice) is seven months. All mean durations are slightly higher than the corresponding median duration.

The median duration of any breastfeeding, exclusive breastfeeding, and predominant breastfeeding varies little across background characteristics. The median duration of any breastfeeding is shortest in zoba Debubawi Keih Bahri (18 months), as is the median duration of exclusive breastfeeding (less than a month).

The frequency of breastfeeding during a 24-hour period before the survey is examined in Table 10.3. The daily frequency of breastfeeding of children under six month in Eritrea exceeds or meets the WHO recommendation (WHO, 1998). Ninety-eight percent of children under six months were breastfed six or more times in the 24 hours preceding the survey. The average number of daytime and nighttime feeds is 7 and 5, respectively.

Table 10.3 Median duration of breastfeeding

Median duration of any breastfeeding, exclusive breastfeeding, and predominant breastfeeding among children born in the three years preceding the survey, percentage of breastfeeding children under six months living with the mother who were breastfed six or more times in the 24 hours preceding the survey, and mean number of daytime and nighttime feeds, by background characteristics, Eritrea 2002

	Median duration (months) of breastfeeding[1]				Breastfeeding children under six months[2]			
Background characteristic	Any breast-feeding	Exclusive breast-feeding	Pre-dominant breast-feeding[3]	Number of children	Percentage breastfed 6+ times in last 24 hours	Mean number of day feeds	Mean number of night feeds	Number of children
Sex								
Male	22.1	2.3	7.1	1,760	97.7	7.0	4.8	329
Female	21.4	2.6	7.2	1,717	98.1	6.9	4.7	326
Residence								
Urban	21.6	2.8	5.5	1,145	96.8	6.6	4.8	187
Asmara	21.7	2.6	4.5	493	98.1	(6.2)	(4.8)	75
Other towns	21.6	3.0	6.3	652	95.9	6.8	4.9	111
Rural	22.0	2.3	7.9	2,332	98.3	7.1	4.7	468
Zoba								
Debubawi Keih Bahri	17.9	0.6	5.6	114	97.6	5.8	4.1	22
Maekel	21.5	2.9	5.1	643	98.6	6.2	4.7	101
Semenawi Keih Bahri	21.0	2.1	7.9	463	98.9	8.4	5.4	92
Anseba	21.6	3.0	7.5	516	98.3	8.1	5.2	96
Gash-Barka	22.2	2.1	7.6	673	99.3	6.7	4.3	112
Debub	22.2	2.6	7.7	1,068	96.4	6.5	4.7	232
Mother's Education								
No education	22.2	2.2	8.0	2,154	99.6	7.4	5.0	409
Primary	21.3	2.8	7.0	618	99.1	6.6	4.6	112
Middle	21.8	3.1	6.3	254	92.4	(6.3)	(4.2)	60
Secondary +	20.7	3.0	4.6	451	91.3	5.7	4.1	74
Wealth index								
Lowest	20.8	2.2	8.5	743	97.1	7.6	4.8	156
Second	24.3	2.1	7.8	735	99.7	7.1	4.7	137
Middle	23.1	2.6	7.7	737	99.5	7.0	4.8	143
Fourth	21.8	2.7	6.0	702	96.2	6.4	4.6	121
Highest	20.8	2.7	5.1	560	96.4	6.4	5.0	96
Total	21.8	2.5	7.1	3,477	97.9	na	na	655
Mean	22.3	4.3	8.9	na	na	7.0	4.8	na

Note: Medians and means durations are based on current status. Figures in parentheses are based on 25-49 unweighted cases.

na = Not applicable

[1] It is assumed that non-last-born children not living with the mother are not currently breastfeeding.

[2] Excludes children for whom there is no a valid answer on the number of times breastfed

[3] Either exclusively breastfed or received breast milk and plain water, water-based liquids and/or juice only (excludes other milk)

10.4 TYPES OF COMPLEMENTARY FOODS CONSUMED

Table 10.4 presents information on the different types of food that are given to children in the first three years of life. Data are shown separately for breastfeeding children and nonbreastfeeding children. It is important to note that the categories presented in Table 10.4 are not exclusive. The child who consumes milk may also consume semisolid foods. While only a few breastfeeding infants under 6 months receive infant formula, a larger proportion of children over one year and those who are not breastfeeding receive infant formula.

Table 10.4 Foods consumed by children in the day or night preceding the interview

Percentage of children under three years of age living with the mother who consumed specific foods in the day or night preceding the interview, by breastfeeding status and age, Eritrea 2002

Child's age in months	Infant formula	Other milks/ cheese/ yogurt	Other liquids[1]	Food made from grains	Fruits/ vege-tables[2]	Food made from roots/ tubers	Food made from legumes	Meat/ fish/ shellfish/ poultry eggs	Food made with oil/fat/ butter	Fruits and vegetables rich in vitamin A[3]	Any solid or semi-solid food	Number of children
BREASTFEEDING CHILDREN												
<2	0.0	2.3	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	196
2-3	1.4	4.6	11.7	0.5	0.5	0.0	0.5	0.6	0.0	0.5	3.4	239
4-5	6.3	14.2	23.9	4.8	3.1	0.0	1.0	1.0	1.4	1.5	18.0	216
6-7	14.8	20.7	42.3	18.7	11.9	1.7	3.9	9.8	4.5	10.2	46.1	216
8-9	15.8	25.5	56.9	27.6	17.9	1.0	8.4	22.9	9.6	12.7	63.8	191
10-11	19.3	32.1	59.2	32.0	29.3	7.3	12.7	23.0	11.1	26.6	79.0	187
12-15	23.2	43.5	73.6	36.6	35.7	8.9	19.1	26.3	23.9	29.2	91.0	323
16-19	21.2	41.4	89.1	44.4	40.6	9.4	32.7	41.7	36.0	31.5	96.5	256
20-23	18.6	41.4	82.9	36.5	33.3	8.9	26.4	34.1	28.9	26.1	92.1	167
24-27	13.1	41.9	82.3	36.5	43.8	7.6	33.7	39.7	35.9	36.6	99.1	133
28-31	(9.5)	(39.6)	(86.6)	(24.5)	(32.9)	(3.6)	(23.0)	(11.5)	(26.5)	(27.8)	(96.8)	42
32-35	(49.7)	(36.2)	(93.8)	(44.6)	(42.8)	(0.0)	(25.4)	(33.9)	(51.5)	(18.9)	(98.2)	26
<6	2.6	7.1	13.0	1.8	1.2	0.0	0.5	0.5	0.5	0.7	8.5	651
6-9	15.3	22.9	49.2	22.9	14.7	1.4	6.0	16.0	6.9	11.4	54.4	407
NONBREASTFEEDING CHILDREN												
16-19	43.6	83.0	91.3	48.6	56.5	8.7	16.3	66.3	36.3	47.3	99.6	45
20-23	25.2	59.0	89.7	35.1	45.6	10.4	27.9	34.3	40.5	37.4	99.0	103
24-27	26.0	49.1	88.2	47.6	49.3	9.1	27.6	41.3	41.8	42.8	100.0	218
28-31	26.9	54.1	86.5	51.8	46.2	17.2	34.4	40.5	37.7	41.6	99.6	160
32-35	27.8	52.8	89.0	39.5	51.9	14.5	41.5	43.4	41.5	39.3	99.1	169

Note: Breastfeeding status and food consumed refer to a "24 hour" recall period (yesterday and last night). Figures are not shown for nonbreastfeeding children under 16 months because there were fewer than 25 unweighted cases in each age group. Figures in parentheses are based on 25-49 unweighted cases.

[1] Does not include plain water

[2] Includes fruits and vegetables rich in vitamin A

[3] Includes pumpkin, red or yellow yams or squash, carrots, red sweet potatoes, green leafy vegetables, mangoes, papayas, and other locally grown fruits and vegetables that are rich in vitamin A

Under the age of six months, 9 percent of children are fed solid or semisolid foods. Seven percent of infants in this age group are fed other milks, cheese, or yogurt, 3 percent are fed infant formula, and 2 percent are fed foods made from grains. At age 6-9 months, the period of the introduction of complementary foods, only 54 percent of infants receive solid or semisolid foods. Of those who receive complementary foods, the variety of foods is limited. Twenty-three percent receive foods made from grains, 23 percent receive other kinds of milk, cheese, or yogurt, while 16 percent receive animal products

(a major source of iron, zinc, and vitamin A); 15 percent are given fruits and vegetables and 15 percent are given infant formula. Other fruits and vegetables rich in vitamin A are consumed by 11 percent of infants age 6-9 months.

At one year of age (10-11 months), one in five breastfeeding children is not receiving solid foods. Three in ten children are receiving milk, cheese, or yogurt, foods made from grains, and fruits and vegetables. One-fourth are receiving fruits and vegetables rich in vitamin A and animal products. Infant formula is given to one in five children in this age group. By 20-23 months of age, 92 percent of children are fed solid foods; including foods made from grains (37 percent), animal products (34 percent), and fruits and vegetables (33 percent). One in four children age 20-23 months eats legumes and fruits and vegetables rich in vitamin A. Three in ten young children in this age group consume foods enriched with oils, fats, or butter (increasing the caloric density of the foods).

Few children under two years of age are not breastfed in Eritrea. For nonbreastfeeding children, at two years of age the pattern of feeding is markedly different from that among breastfeeding children. Over 40 percent of nonbreastfeeding children receive fruits and vegetables and foods enriched with oil, fats or butter; and more than one-third are fed animal products and fruits and vegetables rich in vitamin A along with foods made from grains. Sixty percent of children in this age receive milk products, and 25 percent are fed infant formula.

10.5 FREQUENCY OF FOODS CONSUMED BY CHILDREN IN THE PAST DAY AND NIGHT

The nutritional requirements of young children are more likely to be met if they are fed a variety of foods. Infants and young children eat small meals, and therefore, frequent meals are necessary to provide them with required nutrients. In the 2002 EDHS survey, interviewers read a list of specific foods or food types and asked the mother to report the number of times during the last 24 hours their youngest child under three had consumed each food. Table 10.5 shows the mean number of times specific foods were consumed by children under three years in the day and night preceding the interview.

Table 10.5 shows that among breastfeeding children age 6-7 months, only other liquids (juice and water-based liquids) are given almost once a day, with solid foods given much less frequently. At one year of age (10-11 months), young children are fed milk, cheese or yogurt and fruits and vegetables almost once per day. Other liquids that are not as nutritious and may interfere with continued breastfeeding are given twice a day. At two years of age (20-23 months), breastfed children are eating foods at about the same frequency as the one-year-olds, except there has been an increase in animal products, fruits and vegetables rich in vitamin A, and foods fortified with oil, fats and butter to almost once per day.

For children who are no longer breastfeeding, the need for varied and substantial nutritious foods is even greater. The EDHS data show that among children 20-23 months who are not breastfed, the frequency of eating most foods is similar to that of breastfed children. However, fruits and vegetables are given, on average, more than once a day. Other foods rich in vitamin A, like carrots, pumpkin, mango, and papaya, are also provided about once per day, which is slightly more frequent than among breastfed children; milk products are also given more frequently.

It is recommended by the World Health Organization that for the average healthy breastfed infant, meals of complementary foods should be provided 2-3 times per day at 6-8 months of age and 3-4 times per day at 9-11 and 12-24 months of age, with additional nutritious snacks offered 1-2 times per day (Dewey, 2001). The number of meals required for children is based on the energy density of foods. Consuming an appropriate variety of foods is essential for the nutrition of children.

Table 10.5 Frequency of foods consumed by children in the day and night preceding the interview

Mean number of times specific foods were consumed in the day or night preceding the interview by youngest children under three years of age living with the mother, according to breastfeeding status and age, Eritrea 2002

Child's age in months	Infant formula	Other milk/ cheese/ yogurt	Other liquids [1]	Food made from grains	Fruits/ vege-tables [2]	Food made from roots/ tubers	Food made from legumes	Meat/ fish/ shellfish/ poultry eggs	Food made with oil/fat/ butter	Fruits and vegetables rich in vitamin A [3]	Number of children
BREASTFEEDING CHILDREN											
<2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	196
2-3	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	239
4-5	0.1	0.3	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	216
6-7	0.3	0.5	0.9	0.3	0.2	0.0	0.1	0.1	0.1	0.2	216
8-9	0.2	0.5	1.3	0.5	0.3	0.0	0.1	0.3	0.1	0.2	191
10-11	0.4	0.8	1.6	0.6	0.7	0.1	0.2	0.3	0.2	0.5	187
12-15	0.4	0.9	2.0	0.6	0.9	0.1	0.3	0.4	0.4	0.6	323
16-19	0.4	0.9	2.7	0.7	1.0	0.2	0.4	0.6	0.7	0.6	256
20-23	0.4	1.1	2.8	0.6	0.9	0.1	0.4	0.6	0.7	0.6	167
24-27	0.2	1.0	2.7	0.7	1.1	0.1	0.5	0.6	0.8	0.8	133
28-31	(0.2)	(0.9)	(2.9)	(0.5)	(0.8)	(0.0)	(0.4)	(0.1)	(0.6)	(0.6)	42
32-35	(1.0)	(0.7)	(3.1)	(0.6)	(0.8)	(0.0)	(0.3)	(0.5)	(0.9)	(0.4)	26
<6	0.1	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	651
6-9	0.3	0.5	1.1	0.4	0.3	0.0	0.1	0.2	0.1	0.2	407
NONBREASTFEEDING CHILDREN											
16-19	1.0	2.4	3.1	0.6	1.7	0.1	0.2	0.9	0.6	1.0	45
20-23	0.5	1.6	3.6	0.6	1.5	0.2	0.5	0.6	0.8	0.9	103
24-27	0.5	1.1	3.1	0.8	1.2	0.1	0.5	0.7	0.9	0.8	218
28-31	0.6	1.4	3.6	1.1	1.6	0.3	0.6	0.8	0.8	1.1	160
32-35	0.6	1.2	3.3	0.6	1.5	0.3	0.7	0.7	1.0	1.1	169

Note: Breastfeeding status and food consumed refer to a "24 hour" recall period (yesterday and last night). For nonbreastfeeding children, figures for children under 16 months are not shown because there were fewer than 25 unweighted cases in each category. Figures in parentheses are based on 25-49 unweighted cases.

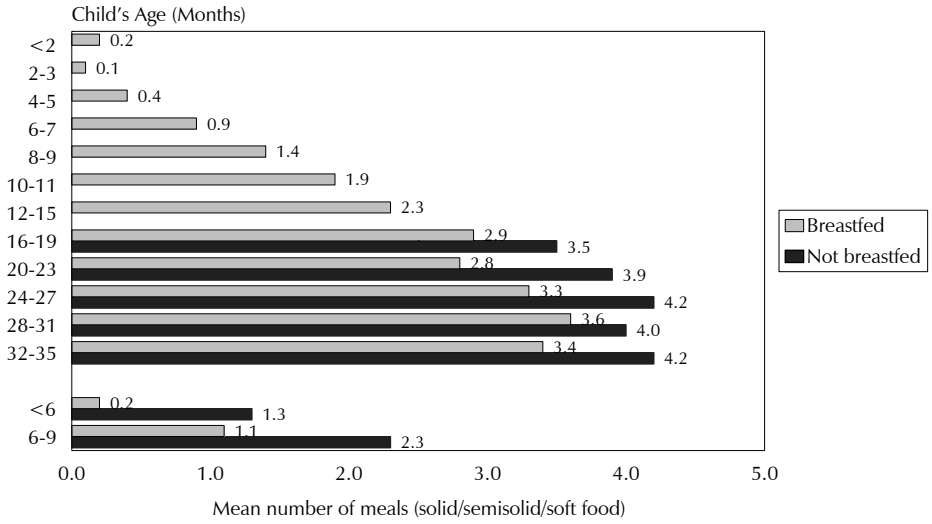
[1] Does not include plain water

[2] Includes fruits and vegetables rich in vitamin A

[3] Includes pumpkin, red or yellow yams or squash, carrots, red sweet potatoes, green leafy vegetables, mangoes, papayas, and other locally grown fruits and vegetables that are rich in vitamin A

Figure 10.1 shows the mean number of meals (solid, semisolid, or soft foods) breastfeeding children under three years and nonbreastfeeding children 16-35 months received in the day and night before the survey. For nonbreastfeeding children, data are not shown for children under 16 months because there were fewer than 25 cases in each age group. Figure 10.1 indicates that among breastfeeding and nonbreastfeeding children neither those age 6-8 months nor older children get the recommended number of meals and snacks in a 24-hour period. Although nonbreastfeeding children get more meals, the extra meals are not sufficient to compensate for lack of breast milk.

Figure 10.1
Frequency of Meals Consumed by Children Under 36 Months of Age Living with Their Mother



Note: Data are not shown for age groups with fewer than 25 unweighted cases. EDHS 2002

10.6 FREQUENCY OF FOODS CONSUMED BY CHILDREN IN THE PAST SEVEN DAYS

Table 10.6 shows the average number of days specific foods were consumed by youngest children under three years in the seven days preceding the interview. Breastfeeding children age 6-9 months drank plain water during six of the preceding seven days and consumed each type of food and each type of other liquid on one or two of the preceding seven days. For example, breastfeeding children drank sugar water as well as tea or other beverages an average of 1.5 days in the past week, and *injera*[1] as well as food made from grains only one day. Other foods and liquids were fed to breastfeeding children age 6-9 months less than one day in the week preceding the interview.

Breastfeeding children age 10-11 months consume a variety of foods but each of these foods is given only two days a week or less. Foods and liquids given to this group of children most often are plain water (six days), *injera* (three days), and the tea category, sugar water, and foods made from grains (two days each). Breastfeeding children age 20-23 months have a similar feeding pattern but consume most of these foods more often than children age 10-11 months.

Children age 20-23 months who are not receiving breast milk consume water and most water-based liquids at the same frequency as breastfeeding children, but they consume all types of milk and dairy products more often than breastfeeding children. Nonbreastfeeding children in this age group also eat *injera* one day more than breastfeeding children. Nonbreastfeeding children also eat most other solid and semisolid food slightly more frequently than breastfeeding children.

[1] Pancake-like bread made from fermented sorghum or teff

Table 10.6 Frequency of foods consumed by children in preceding seven days

Mean number of days specific foods were received in the seven days preceding the interview by youngest children under three years of age living with the mother, by breastfeeding status and age, Eritrea 2002

Child's age in months	Liquids								Solid/semisolid foods												Number of children
																		Fruits and vegetables rich in vitamin A			
	Plain water	Infant formula	Powdered or tinned milk	Fresh milk	Fruit juice	Sugar water	Tea, kerkede, abake, coffee, soft drinks	Other liquids	Food made from grains	Food made from roots/ tubers	Fruits vege-tables not rich in vitamin A	Food made from legumes	Cheese/ yog-hurt	Meat/ fish/ shell-fish/ poultry/ eggs	Food made with oil/ fat/ butter	Injera[1]	Other solid, semi-solid food	Pumpkin/ red or yellow yams or squash/ carrots/ red sweet potatoes	Green leafy vege-tables	Mango/ papaya/ other local fruit	
BREASTFEEDING CHILDREN																					
<2	1.4	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	196
2-3	2.6	0.1	0.2	0.1	0.1	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	239
4-5	4.5	0.3	0.4	0.6	0.2	0.8	0.5	0.3	0.2	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.2	0.0	0.0	0.0	216
6-7	5.5	0.8	0.6	0.7	0.4	1.3	1.0	0.7	1.1	0.0	0.3	0.2	0.1	0.4	0.2	0.5	0.4	0.2	0.2	0.0	216
8-9	6.1	1.0	0.6	0.9	0.5	1.7	2.1	0.7	1.6	0.1	0.6	0.5	0.3	1.2	0.5	1.6	0.6	0.6	0.3	0.2	191
10-11	6.3	1.2	0.9	1.3	0.6	2.1	2.2	0.5	2.0	0.2	0.4	0.7	0.3	1.2	0.7	3.0	1.2	0.9	0.5	0.3	187
12-15	6.3	1.4	1.1	1.4	0.8	2.0	3.2	0.9	1.9	0.3	0.9	0.9	0.5	1.5	1.4	3.6	1.3	0.9	0.8	0.4	323
16-19	6.7	1.1	0.6	2.0	0.6	2.2	4.8	1.0	2.6	0.5	1.0	1.7	0.4	2.2	2.2	4.8	1.8	0.9	0.9	0.4	256
20-23	6.6	1.0	0.9	1.9	0.7	1.9	4.4	0.8	2.2	0.5	0.8	1.2	0.5	1.8	1.7	4.9	2.2	1.0	1.0	0.4	167
24-27	6.5	0.8	0.7	1.6	0.6	2.7	4.2	1.0	2.0	0.3	0.7	1.6	0.6	2.1	2.0	5.1	2.1	1.2	1.1	0.1	133
28-31	(6.5)	(1.0)	(0.5)	(2.0)	(0.4)	(3.5)	(4.3)	(1.3)	(1.8)	(0.4)	(1.0)	(1.7)	(0.3)	(0.9)	(1.7)	(5.3)	(2.1)	(0.9)	(0.6)	(0.2)	42
32-35	(6.9)	(1.7)	(0.8)	(1.4)	(1.6)	(2.5)	(5.8)	(0.5)	(2.2)	(0.0)	(1.3)	(0.8)	(0.7)	(2.1)	(3.4)	(5.9)	(3.8)	(0.3)	(0.9)	(0.8)	26
<6	2.9	0.1	0.2	0.3	0.1	0.5	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	651
6-9	5.8	0.9	0.6	0.8	0.4	1.5	1.5	0.7	1.3	0.1	0.4	0.4	0.2	0.7	0.4	1.0	0.5	0.4	0.3	0.1	407
NONBREASTFEEDING CHILDREN																					
16-19	6.1	2.7	2.0	3.9	1.9	1.8	4.7	1.6	3.1	0.4	2.1	0.9	1.3	2.9	2.5	5.1	2.9	2.3	0.6	1.0	45
20-23	6.6	1.6	1.2	2.5	0.9	1.9	5.6	1.3	2.0	0.4	1.2	1.3	1.0	2.2	2.3	6.0	2.4	1.0	1.1	0.5	103
24-27	6.7	1.6	0.4	2.7	0.5	2.2	5.5	1.2	2.7	0.4	1.2	1.6	0.8	2.6	2.6	5.7	2.5	1.4	1.6	0.3	218
28-31	6.6	1.6	1.0	2.2	0.7	2.8	4.6	1.2	2.9	0.9	1.3	1.9	0.8	2.3	2.2	5.6	2.5	1.1	1.3	0.6	160
32-35	6.8	1.6	1.0	2.3	1.2	2.0	5.6	0.9	2.2	0.7	1.2	2.2	0.9	2.1	2.4	6.1	3.1	1.2	1.4	0.6	169

Note: Breastfeeding status refers to a "24 hour" recall period (yesterday and last night). For the nonbreastfeeding children, figures for children under 16 months are not shown because of fewer than 25 unweighted cases in each group. Figures in parentheses are based on 25-49 unweighted cases.

[1] Pancake-like bread made from sorghum or teff

10.7 MICRONUTRIENT SUPPLEMENTATION

Micronutrients are essential for the metabolic processes in the body and play a major role in nutrition and health. Micronutrient deficiencies constitute a serious threat to child health and survival. The 2002 EDHS survey collected various types of data that are useful in assessing the micronutrient intake among young children and women.

Use of Iodized Salt in Households

Disorders induced by dietary iodine deficiency constitute a major global nutrition concern. Iodine deficiency in the fetus leads to increased rates of abortion, stillbirths, congenital anomalies, cretinism, psychomotor defects, and neonatal mortality. In children and adults, the effects are demonstrated as goiter, hypothyroidism, impaired mental functions, retarded mental and physical development, and diminished school performance. Iodine deficiency can be avoided by using salt that has been fortified with iodine.

In the 2002 EDHS survey, the iodine content of the salt used in the household was measured using a rapid test kit developed by UNICEF. The test kit consists of ampoules of a stabilized starch solution and a weak acid-based solution. A drop of the starch solution was squeezed onto a salt sample obtained in the household, causing the salt to change color if it was fortified with iodine. The interviewers conducting the test matched the color of the salt to a color chart included with the test kit to determine the level of iodine. Salt containing at least 15 parts per million (ppm) is considered adequately iodized. Ninety-six percent of households interviewed in the EDHS provided salt for testing, while 3 percent had no salt available in the household.

Table 10.7 shows that slightly more than two-thirds of households use adequately iodized salt for cooking (15 ppm or more). Rural households are less likely to use adequately iodized salt (60 percent) than urban households (81 percent). It is not surprising that use of adequately iodized salt increases from 52 percent in households in the lowest quintile of the wealth index to 85 percent in households in the highest quintile. Households in the two Red Sea zobas, Semenawi Keih Bahri and Debubawi Keih Bahri, are least likely to use adequately iodized salt. Although more than two-thirds of households in Gash-Barka use iodized salt, the iodine content of the salt used in one in ten households is below 15 ppm.

Table 10.7 Iodization of household salt

Percent distribution of households with salt tested for iodine content by level of iodine in salt (parts per million), percentage of households tested, and percentage of households with no salt, according to background characteristics, Eritrea 2002

Background characteristic	Level of iodine in household salt			Total	Number of households	Percentage of households tested	Percentage of households with no salt	Number of households
	None (0 ppm)	Inadequate (<15 ppm)	Adequate (15+ ppm)					
Residence								
Urban	14.8	4.6	80.5	100.0	3,507	96.5	2.3	3,634
Asmara	11.5	5.3	83.1	100.0	1,632	97.3	1.6	1,678
Other towns	17.7	4.0	78.3	100.0	1,875	95.8	3.0	1,956
Rural	32.6	7.5	60.0	100.0	5,510	95.7	2.9	5,755
Zoba								
Debubawi Keih Bahri	41.8	7.2	51.0	100.0	305	92.8	6.5	328
Maekel	15.5	5.4	79.1	100.0	2,068	97.5	1.3	2,122
Semenawi Keih Bahri	45.6	5.6	48.7	100.0	1,135	95.0	3.9	1,195
Anseba	24.4	5.4	70.2	100.0	1,155	97.8	1.6	1,181
Gash-Barka	32.6	10.3	57.1	100.0	1,714	95.2	3.1	1,800
Debub	19.2	5.2	75.6	100.0	2,640	95.6	2.9	2,763
Wealth index								
Lowest	38.8	8.9	52.3	100.0	1,481	96.7	2.5	1,532
Second	36.1	8.0	55.9	100.0	1,829	95.4	3.3	1,918
Middle	30.6	6.6	62.8	100.0	1,940	95.1	3.2	2,041
Fourth	14.7	4.5	80.8	100.0	1,929	96.0	2.8	2,011
Highest	10.9	4.4	84.8	100.0	1,836	97.3	1.5	1,887
Total	25.7	6.4	68.0	100.0	9,017	96.0	2.7	9,389

Micronutrient Status of Young Children

In addition to receiving vitamin A through diet, vitamin A supplements may be received as part of primary prevention programs. Women may get vitamin A supplements during the postpartum period to benefit both the women and their breastfeeding children. Vitamin A is an essential micronutrient for the normal functioning of the visual system, growth and development, resistance to disease, and reproduction. Severe vitamin A deficiency is associated with total loss of vision or with other vision impairments including night blindness. Vitamin A is believed to improve immunity and hence reduce mortality rates in children and women.

Table 10.8 shows the percentage of youngest children under three years who consumed fruits and vegetables rich in vitamin A in the seven days preceding the survey, and the percentage of children 6-59 months old who received vitamin A supplements in the six months before the survey. Table shows that 23 percent of children under three years consumed fruits and vegetables rich in vitamin A and 38 percent of children 6-59 months old were reported to have received a vitamin A supplement in the previous 6 months.

Table 10.8 Micronutrient intake among children

Percentage of youngest children under age three living with the mother who consumed fruits and vegetables rich in vitamin A in the seven days preceding the survey, and percentage of children age 6-59 months who received vitamin A supplements in the six months preceding the survey, and percentage of children under five living in households using adequately iodized salt, by background characteristics, Eritrea 2002

Background characteristic	Consumed fruits and vegetables rich in vitamin A[1]	Number of youngest children under three living with mother	Consumed vitamin A supplements	Number of children 6-59 months	Children living in households using adequately iodized salt[2]	Number of children under five
Age in months						
<6	0.7	651	na	na	69.8	638
6-9	12.1	416	31.6	422	68.7	406
10-11	27.1	194	37.5	199	67.7	191
12-23	31.2	922	41.6	959	65.9	930
24-35	39.0	749	41.5	1,042	68.4	1,002
36-47	na	na	42.2	1,205	65.3	1,159
48-59	na	na	30.7	1,262	70.0	1,215
Sex						
Male	24.1	1,474	38.1	2,615	67.3	2,844
Female	22.8	1,457	37.9	2,472	68.4	2,698
Birth order						
1	27.0	547	41.2	938	69.8	1,046
2-3	26.0	1,015	40.8	1,796	72.3	1,931
4-5	20.6	659	35.9	1,119	65.5	1,205
6+	19.6	710	33.5	1,235	62.1	1,359
Breastfeeding status						
Breastfeeding	17.5	2,191	38.6	1,597	66.4	2,183
Not breastfeeding	41.0	735	37.8	3,473	68.7	3,342
Residence						
Total urban	41.5	990	49.9	1,743	80.9	1,875
Asmara	52.6	428	56.8	734	84.6	800
Other towns	33.0	562	44.9	1,010	78.2	1,075
Rural	14.3	1,942	31.8	3,345	61.2	3,667
Zoba						
Debubawi Keih Bahri	15.6	92	22.1	152	44.1	166
Maekel	47.3	548	51.7	964	80.1	1,054
Semenawi Keih Bahri	14.5	385	36.0	687	47.9	752
Anseba	20.8	439	37.3	780	70.5	858
Gash-Barka	18.0	556	32.2	926	56.5	991
Debub	18.2	912	35.8	1,579	76.5	1,721
Mother's education						
No education	14.7	1,798	32.9	3,210	60.2	3,475
Primary	30.1	526	38.1	932	77.0	1,005
Middle	36.6	218	44.4	320	85.6	367
Secondary +	47.6	390	60.7	625	83.3	694
Mother's age at birth						
<20	24.3	367	37.1	623	67.0	696
20-24	23.7	648	40.9	1,230	70.9	1,322
25-29	25.4	802	37.4	1,284	67.1	1,388
30-34	20.3	454	41.1	867	64.9	950
35-49	22.5	662	33.6	1,084	68.2	1,186
Wealth index						
Lowest	11.6	606	30.3	1,090	54.8	1,204
Second	10.3	608	33.0	1,055	55.7	1,144
Middle	18.3	625	32.7	1,042	64.7	1,127
Fourth	34.6	604	43.5	1,059	79.7	1,138
Highest	47.2	488	54.1	842	89.1	927
Total	23.4	2,932	38.0	5,088	67.8	5,542

Note: Information on vitamin A supplements is based on mother's recall. Total includes 18 children with missing information on breastfeeding status, who are not shown separately.
na = Not applicable
[1] Includes pumpkin, red or yellow yams or squash, carrots, red sweet potatoes, green leafy vegetables, mango, papaya, and other locally grown fruits and vegetables that are rich in vitamin A
[2] Salt containing 15 ppm of iodine or more. Excludes children in households in which salt was not tested.

As expected, youngest children (under 6 months) were least likely to have consumed some type of food rich in vitamin A because most are being exclusively breastfed and only 4 percent are receiving complementary foods (see Table 10.2). As age increases, the consumption of foods rich in vitamin A and also the consumption of vitamin A supplements increase. For example, 12 percent of children age 6-9 months and 39 percent of children age 24-25 months consumed fruits and vegetables rich in vitamin A in the week before the survey. Rural children under three years are only one-third as likely to eat foods rich in vitamin A as children in urban areas. Rural children are also less likely than urban children to receive vitamin A supplements, but the differences are not as large. Zoba differentials are substantial; supplementation of vitamin A is as low as 22 percent in zoba Debubawi Keih Bahri and as high as 52 percent in zoba Maekel. Vitamin A supplementation and consumption of fruits and vegetables rich in vitamin A are positively associated with mother's education. Compared with children of uneducated mothers, children of mothers with at least some secondary education are twice as likely to receive vitamin A supplements, and more than thrice as likely to consume foods rich in vitamin A. The relationship between the wealth index and vitamin A supplementation and consumption of foods rich in vitamin A is also positive, and the disparity between the highest and the lowest quintiles is wider for consumption of foods rich in vitamin A than by education. Differences in vitamin A supplementation by other background characteristics are minimal.

Sixty-eight percent of children under five live in households that use adequately iodized salt–the same as the proportion of households that possess adequately iodized salt. Differentials in the proportion of children living in households using adequately iodized salt by residence, zoba, and the wealth index are similar to those for households (Table 10.7). The differentials by other background characteristics show the same pattern as the differentials in vitamin A supplementation among children under five.

Micronutrient Supplementation for Women

Vitamin A Supplementation

Provision of vitamin A supplements to women after delivery of a child is intended to boost stores of vitamin A in the woman and ensure adequate delivery of this essential micronutrient to the child in breast milk. The 2002 EDHS survey asked women whether they had received a vitamin A supplement in the two-month period after delivery of their last born child in the five years preceding the survey. The women were also asked whether they had experienced any vision problems during pregnancy. Night blindness in pregnancy is a common manifestation of vitamin A deficiency.

Table 10.9 shows that 13 percent of mothers received a vitamin A supplement during the postnatal period. Variations in postpartum vitamin A supplementation by child's birth order and age of the mother are minimal. Vitamin A supplementation is much higher in urban areas than rural areas, higher in zoba Maekel than other zobas, and higher among women with some secondary or higher education than women with no schooling.

Table 10.9 shows that 4 percent of women with a recent birth experienced night blindness, an indication of vitamin A deficiency. Night blindness during pregnancy is more prevalent among women age 35-49, women in rural areas, women without schooling, and among mothers with sixth- or higher-order births. Zoba Debub has the highest prevalence of night blindness among mothers and zoba Maekel, the lowest.

Table 10.9 Micronutrient intake among mothers

Percentage of women with a birth in the five years preceding the survey who received a vitamin A dose in the first two months after delivery, percentage who suffered from night blindness during pregnancy, percentage who took iron tablets for specific numbers of days, and percentage who live in households using adequately iodized salt, by background characteristics, Eritrea 2002

Background characteristic	Received vitamin A dose post-partum[1]	Suffered night blindness during pregnancy		Number of days iron tablets were taken during pregnancy					Number of women	Living in households using adequately iodized salt[3]	Number of women
		Reported	Adjusted[2]	None	<60	60-89	90+	Don't know/ missing			
Age at birth											
<20	15.1	8.9	3.7	58.2	38.3	0.7	0.9	1.8	510	67.1	501
20-24	12.7	7.8	2.8	56.4	39.1	1.1	0.5	2.8	946	70.8	921
25-29	12.8	10.1	3.3	58.6	37.5	1.0	0.9	2.0	1,050	67.5	1,007
30-34	15.7	12.3	4.0	60.1	35.8	1.2	0.8	2.2	679	65.0	657
35-49	12.4	17.9	5.6	64.6	31.8	0.6	0.6	2.4	990	67.9	954
Number of children ever born											
1	15.9	6.5	2.3	57.8	37.8	0.8	1.3	2.3	761	70.5	747
2-3	13.5	8.7	3.4	57.9	38.0	1.0	0.8	2.4	1,411	72.0	1,366
4-5	13.3	13.3	4.3	61.1	35.6	0.8	0.5	2.0	922	65.7	880
6+	11.7	17.7	5.3	62.3	33.8	1.0	0.5	2.4	1,081	62.4	1,048
Residence											
Total urban	21.9	6.5	2.3	54.5	39.9	1.2	1.4	3.1	1,448	80.6	1,415
Asmara	28.9	3.6	1.8	57.6	37.0	1.0	2.4	2.1	618	83.4	611
Other towns	16.8	8.7	2.6	52.2	42.0	1.3	0.7	3.8	830	78.4	803
Rural	8.9	14.4	4.8	62.5	34.5	0.8	0.4	1.9	2,727	61.0	2,626
Zoba											
Debubawi Keih Bahri	10.7	19.2	3.0	64.1	31.3	2.0	0.4	2.1	136	45.5	130
Maekel	25.8	3.4	1.5	55.2	39.1	0.8	1.9	3.0	801	79.0	792
Semenawi Keih Bahri	12.7	11.9	4.5	50.6	44.1	1.5	0.3	3.5	560	49.4	542
Anseba	12.7	9.9	2.2	57.7	39.8	0.6	0.5	1.4	589	71.5	576
Gash-Barka	11.4	13.7	4.4	57.6	38.6	1.4	0.3	2.1	789	56.3	753
Debub	8.0	15.4	5.7	68.1	28.8	0.6	0.6	2.0	1,301	76.4	1,247
Mother's education											
No education	9.9	15.1	4.7	62.6	34.0	1.0	0.3	2.1	2,581	60.2	2,482
Primary	11.7	8.7	3.6	57.8	37.7	0.6	1.2	2.7	766	76.2	743
Middle	18.1	2.7	0.5	49.9	45.6	0.7	0.5	3.3	293	83.3	285
Secondary +	30.5	3.8	2.3	53.6	40.6	1.4	2.2	2.1	534	83.8	530
Total	13.4	11.6	3.9	59.7	36.3	0.9	0.7	2.3	4,175	67.9	4,040

Note: For women with two or more live births in the five-year period, data refer to the most recent birth.
[1] In the first two months after delivery
[2] Women who reported night blindness but did not report difficulty with vision during the day
[3] Salt containing 15 ppm of iodine or more. Excludes women in households in which salt was not tested.

Iron Supplementation

Iron-deficiency anemia is a major threat to maternal health; it contributes to low birth weight, lowered resistance to infection, poor cognitive development, and decreased work capacity. Furthermore, anemia increases morbidity from infections because it adversely affects the body's immune response. International recommendations are that iron tablets be taken daily for at least three months during pregnancy.

In the EDHS survey, women who had a recent birth were asked whether they had bought or received any iron tablets during their last pregnancy. If so, the woman was asked the number of days the iron tablets were actually taken during that pregnancy. Table 10.9 shows that four in ten mothers received iron tablets for the last birth in the five years preceding the survey but almost all of them took the tablets for less than 60 days. Coverage of iron supplementation was lower among mothers age 35-49 and mothers in zobas Debubawi Keih Bahri and Debub. Coverage of iron supplementation shows a slight positive relationship with education.

In Eritrea, the Ministry of Health gives pregnant women 120 iron tablets for 60 days, when considered necessary. Women are advised to take two tablets a day. One-third of women who received iron tablets during pregnancy for the most recent birth in the five years before the survey took iron tablets for 6 days or less; two-thirds took tablets for 18 days or less. Only 10 percent of women took iron tablets for more than 30 days (data not shown). With one of the highest levels of antenatal care in sub-Saharan Africa, it is surprising that Eritrea has such low coverage for iron supplementation during pregnancy.

Use of Iodine-Fortified Salt

Sixty-eight percent of women live in households with adequately iodized salt. The differentials for women living in households that use adequately iodized salt by background characteristics show the same patterns as differentials for children.

10.8 NUTRITIONAL STATUS OF CHILDREN UNDER AGE FIVE

The nutritional well being of young children reflects household, community, and national investment in family health and contributes both directly and indirectly to the country's development. In collecting anthropometric data (height and weight), the 2002 EDHS survey permits objective measurement and evaluation of the nutritional status of young children in Eritrea. This evaluation allows identification of subgroups of the child population that are at increased risk of growth faltering, disease, impaired mental development, and death.

In the 1995 EDHS, anthropometric data were restricted to children born to women interviewed with the Women's Questionnaire. These data did not represent all children because they exclude children whose mothers were not in the household at the time of the interview or were not interviewed for some other reason. To overcome biases in estimating children's nutritional status in the 2002 EDHS, all children under age five listed in the Household Questionnaire were weighed and measured.

Measures of Nutritional Status in Childhood

Evaluation of nutritional status is based on the rationale that in a well-nourished population there is a statistically predictable distribution of children of a given age with respect to height and weight. Use of a standard reference population facilitates analysis of any given population over time as well as comparisons among population subgroups. One of the most commonly used reference populations, and the one used in this report, is the U.S. National Center for Health Statistics (NCHS) standard, which is recommended for use by the World Health Organization. In the reference population, only 2.3 percent of children fall below minus two standard deviations (-2 SD) for each of the three indices.

Three standard indices of physical growth that describe the nutritional status of children are presented:

- height-for-age
- weight-for-height
- weight-for-age

Each of these indices measures different aspects of children's nutritional status. The height-for-age index is a measure of linear growth retardation and cumulative growth deficit. Children who are more than minus two standard deviations (-2 SD) below the median of the NCHS reference population in terms of height-for-age are considered short for their age, or *stunted*, a condition that reflects the cumulative effect of chronic malnutrition. If children are more than minus three standard deviations (-3 SD) below the reference median, then they are considered *severely stunted*. Children between -2 SD and -3 SD are considered *moderately stunted*.

Weight-for-height describes a child's current nutritional status. Children who are more than minus two standard deviations (-2 SD) below the reference median are considered thin for their height, or *wasted*. Wasting represents the failure to receive adequate food in the period immediately preceding the survey or may be the result of a recent episode of illness, causing loss of weight and the onset of malnutrition. As with stunting, if children are more than minus three standard deviations (-3 SD) below the reference median, they are considered *severely wasted.* Severe wasting is closely linked to mortality risk.

Weight-for-age is a composite index of weight-for-height and height-for-age and thus does not distinguish between chronic malnutrition (stunting) and acute malnutrition (wasting). Children can be underweight for their age because they are stunted, because they are wasted, or because they are wasted and stunted. Children whose weight-for-age is more than minus two standard deviations (-2 SD) below the median of the reference population are *underweight* for their age, while those who are below minus three standard deviations (-3 SD) from the reference median are *severely underweight*. The weight-for-age index is sometimes used as a proxy of a population's health.

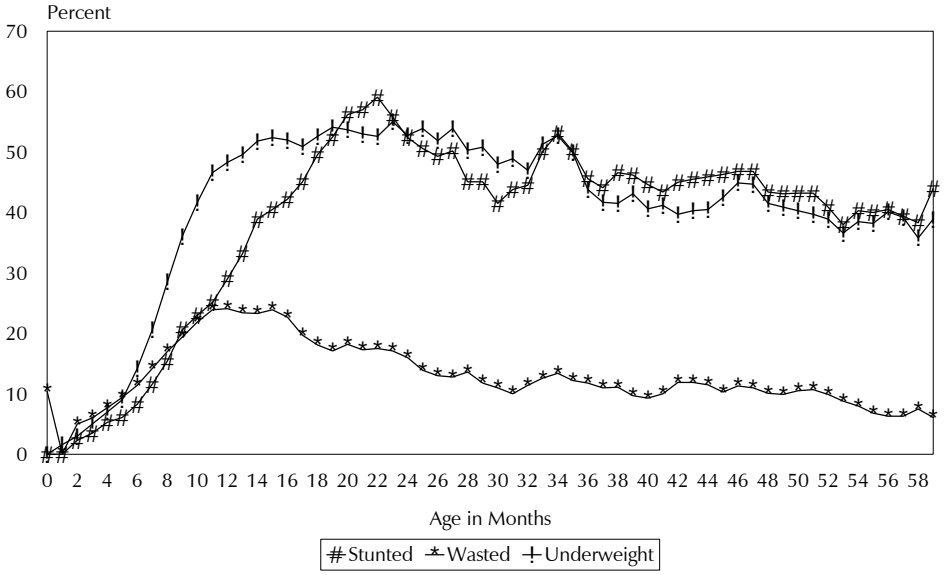
Levels of Child Malnutrition

In the 2002 EDHS, data were complete for 91 percent of children. Table 10.10 shows the percentage of children under five years classified as malnourished according to height-for-age, weight-for-height, and weight-for-age indices, by children's background characteristics. Overall, 38 percent of children under five are stunted (short for their age) and 16 percent are severely stunted. Thirteen percent of children under age five are wasted (thin for their height) and 2 percent are severely wasted. Forty percent of children under five are underweight (low weight-for-age)—which reflects stunting, wasting, or both. Twelve percent of children are severely underweight.

Differentials by Child's Characteristics

Figure 10.2 shows the percentage of children who are malnourished by age, in terms of the three indicators of nutritional status. It is clear from this graph that deterioration in nutritional status begins a few months after birth. A rapid worsening in the linear growth of Eritrean children takes place during the first year, especially late in the first year, and continues through the second year, when stunting peaks at 57-59 percent at age 21-22 months. The prevalence of stunting remains above 40 percent through the fifth year. Weight-for-age malnutrition follows a similar pattern but increases rapidly initially and peaks at 55 percent at age 22 months, and then drops off somewhat faster than stunting. Wasting shows earlier worsening of nutritional status than either stunting or underweight, and peaks at 24 percent at age 11-12 months.

Figure 10.2
Nutritional Status of Children Under Age Five



Note: Plotted values are smoothed by a five-month moving average. EDHS 2002

Table 10.10 shows that for all nutritional indices, boys are slightly more likely to be malnourished than girls. First-order births and children born after a long birth interval (more than 47 months) are less likely to be stunted and underweight than higher-order births and children born after shorter birth intervals. The size of the baby at birth is related to the child's future health and nutritional status. Birth weight or size at birth is an important determinant of the child's nutritional status in the future. According to Table 10.10, for each nutritional index, a higher percentage of children who were reported as small or very small at birth are malnourished, compared with children who were average or larger in size.

Differentials by Mother's Characteristics

Table 10.11 and Figure 10.3 show nutritional status of children by mother's characteristics. Children born to young mothers (age 15-19) are more likely to be first births and less likely to be stunted or underweight than children born to older mothers.

A child's nutritional status is in part determined by the socioeconomic situation of his/her household, which in turn is affected by where that household is physically located, by the wealth index of the household, and the educational level of the child's mother. For instance, rural children are 50 percent more likely to be stunted and underweight, and 69 percent more likely to be wasted, than urban children (Table 10.11). Differentials in malnutrition as indicated by each index are even greater between children in rural areas and Asmara. Children in rural areas are more than twice as likely to be stunted and underweight, and more than three times as likely to be wasted as children in Asmara. Among zobas, malnutrition is more prevalent in zobas Gash-Barka, Anseba, and Semenawi Keih Bahri than in other zobas. In these three zobas, 41-45 percent of children under five years are stunted, 16-18 percent are wasted, and 47-51 percent are underweight. The prevalence of severe malnutrition among children in these zobas is also higher than in other zobas. By contrast, in zoba Maekel, which has the lowest rates of childhood malnutrition, less than one-fourth of children under five are stunted, the same proportion are underweight, and 6 percent are wasted. Mother's education is negatively correlated with childhood

Table 10.10 Nutritional status of children by child's characteristics

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by child's characteristics, Eritrea 2002

Child's characteristic	Height-for-age (stunted)			Weight-for-height (wasted)			Weight-for-age (underweight)			Number of children
	Percentage below -3 SD	Percentage below -2 SD[1]	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[1]	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[1]	Mean Z-score (SD)	
Age in months										
<6	0.6	3.0	0.1	0.8	5.8	-0.3	0.2	4.5	-0.1	573
6-9	2.9	13.1	-0.5	3.3	15.0	-0.8	5.3	22.6	-1.1	411
10-11	7.2	26.6	-1.1	1.3	22.5	-1.1	13.4	47.1	-1.8	194
12-23	18.5	46.3	-1.8	4.6	20.8	-1.2	15.5	52.4	-1.9	895
24-35	23.9	48.3	-1.9	1.7	12.9	-1.0	19.6	51.9	-2.0	1,007
36-47	22.4	45.3	-1.9	1.2	10.7	-0.9	11.1	41.6	-1.8	1,168
48-59	15.7	41.4	-1.7	1.4	8.7	-0.9	9.2	39.2	-1.7	1,218
Sex										
Male	16.7	38.9	-1.5	2.6	13.7	-0.9	11.2	40.5	-1.6	2,781
Female	15.8	36.3	-1.5	1.4	11.3	-0.9	11.8	38.8	-1.6	2,686
Birth order[2]										
1	12.5	29.6	-1.3	2.2	12.9	-0.9	9.3	35.3	-1.5	946
2-3	16.0	37.3	-1.5	2.1	11.1	-0.9	10.1	39.6	-1.6	1,826
4-5	18.1	40.1	-1.6	1.6	12.6	-0.9	13.5	40.3	-1.7	1,156
6+	17.8	41.9	-1.6	2.0	13.9	-0.9	12.5	42.2	-1.7	1,311
Birth interval in months[2]										
First birth[3]	12.9	29.9	-1.3	2.2	12.9	-0.9	9.4	35.6	-1.5	954
<24	18.1	43.2	-1.7	1.4	11.7	-1.0	12.4	42.0	-1.7	786
24-47	17.8	40.2	-1.6	2.2	12.4	-0.9	12.0	41.0	-1.7	2,658
48+	13.8	33.3	-1.3	1.7	12.8	-0.9	10.3	37.5	-1.4	842
Size at birth[2]										
Very small	18.6	42.1	-1.7	3.7	17.7	-1.1	16.4	48.7	-1.9	917
Small	21.9	43.2	-1.8	3.0	15.9	-1.1	17.9	48.8	-1.9	495
Average or larger	15.0	35.8	-1.4	1.5	10.9	-0.9	9.4	36.4	-1.5	3,993
Missing	17.2	48.5	-1.6	3.0	17.9	-0.9	18.8	37.2	-1.7	61
Total	16.3	37.6	-1.5	2.0	12.6	-0.9	11.5	39.6	-1.6	5,466

Note: Table is based on children who stayed in the household the night before the interview. Each of the indices is expressed in standard deviation units (SD) from the median of the NCHS/CDC/WHO International Reference Population. The percentage of children who are more than three or more than two standard deviations below the median of the International Reference Population (-3 SD and -2 SD) are shown according to child's characteristics. Table is based on children with valid dates of birth (month and year) and valid measurement of both height and weight.

[1] Includes children who are below -3 standard deviations from the International Reference Population median

[2] Excludes children whose mothers were not interviewed

[3] First born twins (triplets, etc.) are counted as first births because they do not have a previous birth interval.

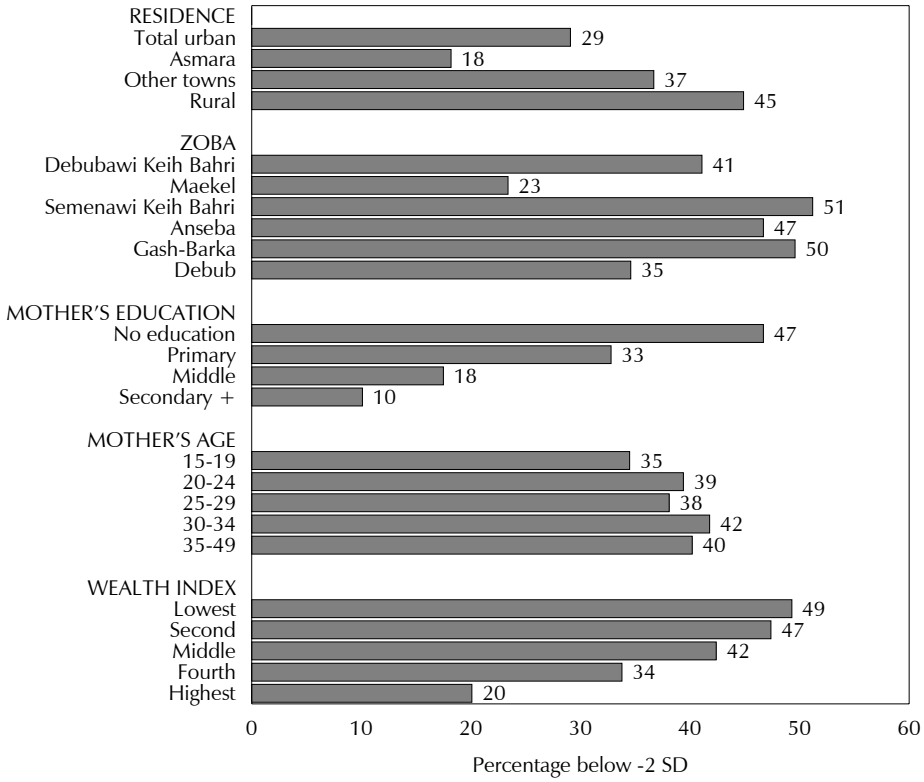
Table 10.11 Nutritional status of children by mother's characteristics

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by mother's characteristics, Eritrea 2002

Mother's characteristic	Height-for-age (stunted)			Weight-for-height (wasted)			Weight-for-age (underweight)			Number of children
	Percentage below -3 SD	Percentage below -2 SD[1]	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[1]	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[1]	Mean Z-score (SD)	
Residence										
Total urban	10.5	27.9	-1.2	1.3	8.6	-0.8	5.8	29.1	-1.3	1,826
Asmara	5.8	17.9	-0.8	0.8	4.0	-0.6	1.4	18.2	-1.0	744
Other towns	13.8	34.9	-1.4	1.6	11.7	-0.9	8.8	36.7	-1.5	1,081
Rural	19.1	42.5	-1.7	2.4	14.5	-1.0	14.3	44.9	-1.8	3,641
Zoba										
Debubawi Keih Bahri	15.4	37.4	-1.4	2.8	13.8	-0.9	12.1	41.1	-1.6	156
Maekel	8.5	23.0	-1.0	0.9	6.1	-0.6	3.5	23.4	-1.1	984
Semenawi Keih Bahri	22.0	41.9	-1.7	3.0	18.0	-1.1	18.0	51.2	-1.9	752
Anseba	17.0	40.5	-1.6	2.3	15.6	-1.1	13.2	46.7	-1.8	873
Gash-Barka	21.2	44.8	-1.7	2.6	16.9	-1.1	18.6	49.6	-1.9	963
Debub	15.1	38.7	-1.5	1.6	9.8	-0.8	8.3	34.6	-1.5	1,738
Mother's education										
No education	20.2	44.6	-1.7	2.5	14.5	-1.0	15.1	46.7	-1.8	3,397
Primary	11.7	30.2	-1.4	1.2	10.2	-0.8	6.4	32.8	-1.4	1,325
Middle	4.5	16.1	-0.7	1.3	6.6	-0.6	2.1	17.5	-1.0	574
Secondary +	(4.1)	(18.2)	(-0.6)	(0.0)	(4.2)	(-0.5)	(0.0)	(10.1)	(-0.8)	54
Age[2]										
15-19	12.7	29.0	-1.2	2.0	12.6	-0.8	10.3	34.5	-1.3	214
20-24	15.9	36.0	-1.5	2.2	10.8	-0.9	10.3	39.4	-1.6	943
25-29	15.5	35.5	-1.5	2.0	12.1	-0.9	10.2	38.1	-1.6	1,403
30-34	17.4	41.3	-1.6	2.2	14.3	-0.9	12.9	41.8	-1.7	1,109
35-49	16.7	39.0	-1.5	1.7	12.7	-0.9	12.3	40.2	-1.6	1,798
Wealth index[2]										
Lowest	20.5	44.8	-1.7	3.1	17.7	-1.1	18.0	49.3	-1.9	1,183
Second	22.1	45.3	-1.8	2.5	15.6	-1.0	16.5	47.4	-1.8	1,157
Middle	17.8	41.5	-1.7	1.8	12.5	-0.9	11.6	42.4	-1.7	1,133
Fourth	12.5	33.9	-1.4	1.3	8.9	-0.8	6.2	33.8	-1.5	1,123
Highest	5.5	17.6	-0.8	0.9	6.3	-0.7	2.5	20.1	-1.0	871
Mother's status										
Mother interviewed	16.3	37.7	-1.5	2.0	12.5	-0.9	11.3	39.6	-1.6	5,240
Mother not interviewed [2]										
Mother in household	15.3	39.7	-1.6	3.1	15.2	-1.1	14.5	46.5	-1.8	115
Mother not in the household[3]	15.9	33.3	-1.4	1.9	14.5	-1.0	16.2	32.8	-1.6	112
Total	16.3	37.6	-1.5	2.0	12.6	-0.9	11.5	39.6	-1.6	5,466

Note: Table is based on children who stayed in the household the night before the interview. Each of the indices is expressed in standard deviation units (SD) from the median of the NCHS/CDC/WHO International Reference Population. The percentage of children who are more than three or more than two standard deviations below the median of the International Reference Population (-3 SD and -2 SD) are shown according to demographic characteristics. Table is based on children with valid dates of birth (month and year) and valid measurement of both height and weight. Figures in parentheses are based on 25-49 unweighted cases.
[1]Includes children who are below -3 standard deviations (SD) from the International Reference Population median
[2]For women who are not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the household schedule.
[3]Includes children whose mothers are deceased

Figure 10.3
Percentage of Children Under Age Five that Are Underweight (weight-for-age below -2 SD) by Background Characteristics



Note: Weight-for-age is a composite index of height-for-age and weight-for-height. EDHS 2002

malnutrition. Children of mothers who have not attended school are two and one-half times more likely to be stunted, three and one-half times more likely to be wasted, and four and one-half times more likely to be underweight than children of mothers who have at least some secondary education.

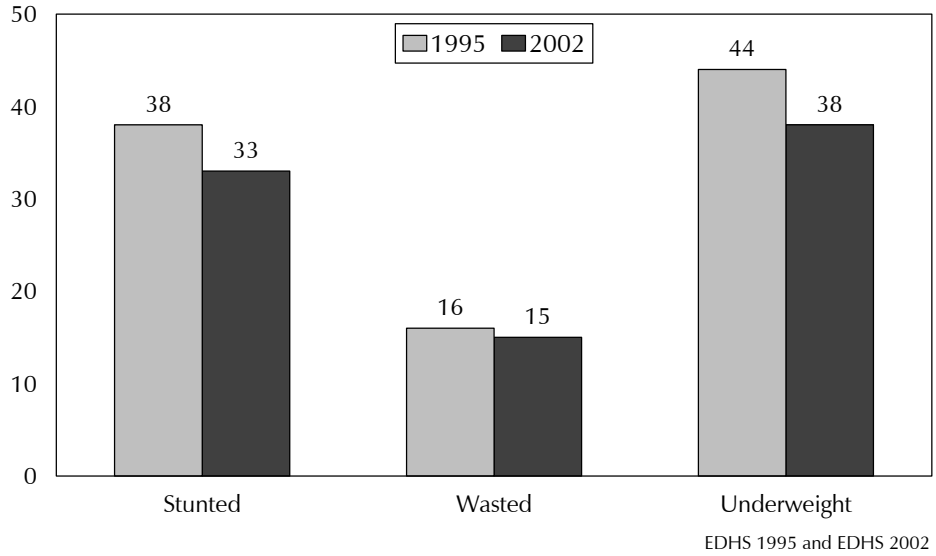
Levels of stunting, wasting, and underweight are negatively correlated with household wealth. Children's level of malnutrition decreases as household wealth increases from the lowest to the highest quintile. The children from households in the lowest quintile of the wealth index are two and one-half times more likely to be stunted and underweight than children from households in the highest quintile. The disparity in malnutrition between the lowest and the highest quintiles is even greater for wasting.

Although the number of children whose mothers were in the household but were not interviewed is small, these children have higher rates of stunting and underweight than other children. Surprisingly, compared with children whose mothers were interviewed, the children whose mothers were not in the household are less likely to be stunted and moderately underweight but more likely to be severely underweight.

Comparison between the results of the 2002 EDHS and the 1995 EDHS is complicated by the fact that unlike the earlier survey, the 2002 EDHS covers children under five and includes anthropometric measurements for children whose mothers were not interviewed. However, if the comparison is limited to children under three years whose mothers were interviewed, it appears that since 1995, the nutritional

status of children—as indicated by three measures of nutritional status—has improved slightly (Figure 10.4).

Figure 10.4
Trends in Levels of Undernutrition among Children Under Age Three, 1995 and 2002



EDHS 1995 and EDHS 2002

10.9 NUTRITIONAL STATUS OF WOMEN

The 2002 EDHS collected data on the height and weight of all women age 15-49. Several measures have been used to assess the nutritional status of women (Krasovec and Anderson, 1991). In this report, two indices are presented—height and body mass index (BMI). BMI is an indicator that combines height and weight measures.

Table 10.12 presents the mean values of the anthropometric indicators and the proportions of women falling into high-risk categories, according to background characteristics. Height of a woman is associated with past socioeconomic status and nutrition during her childhood and adolescence. Women's height is also used to predict the risk of difficult delivery, since small stature is often associated with small pelvis size and the potential for obstructed labor. The risk of having a low-birth-weight baby is higher in short women. The cutoff point for height, below which a woman is identified as "at risk," is in the range of 140-150 cm. As in other DHS surveys, a cutoff point of 145 cm is used for the 2002 EDHS.

The mean height of women measured in the 2002 EDHS survey was 156 cm, which is above the critical height of 145 cm. Overall, 2 percent of women are shorter than 145 cm. There are only small differences in the mean height of women by background characteristics. On average, women in Asmara compared with women in rural areas, and women with at least some secondary education compared with women who have not attended school, are 2 cm taller. As in 1995, women in zoba Semenawi Keih Bahri have the shortest mean height and also the highest proportion below 145 cm among all subgroups shown in Table 10.12. Short stature (below 145 cm) is less prevalent (1 percent) among women in Asmara and zobas Debub and Maekel.

Table 10.12 Nutritional status of women by background characteristics

Among women age 15-49, mean height, percentage under 145 cm, mean body mass index (BMI), and percentage with specific BMI levels, by background characteristics, Eritrea 2002

	Height			Body mass index BMI [1] (kg/m²)									
					Normal	Thin				Overweight/obese			
Background characteristic	Mean height in cm	Percentage below 145 cm	Number of women	Mean BMI	18.5-24.9 (normal)	<18.5 (thin)	17.0-18.4 (mildly thin)	16.0-16.9 (moderately thin)	<16.0 (severely thin)	≥ 25.0 (overweight/obese)	25.0-29.9 (overweight)	30.0 or higher (obese)	Number of women
Age													
15-19	156.3	2.3	1,970	19.3	57.3	39.9	21.9	9.0	8.9	2.8	2.5	0.4	1,875
20-24	156.6	2.7	1,419	19.5	54.2	39.8	20.6	11.6	7.6	6.0	5.7	0.4	1,230
25-29	156.8	1.9	1,528	19.8	51.4	40.6	23.4	10.3	6.9	8.0	7.0	1.1	1,296
30-34	156.0	3.1	1,099	20.2	54.6	36.1	20.3	7.7	8.2	9.2	6.5	2.8	910
35-39	156.3	2.2	1,076	20.8	55.0	30.3	17.9	5.6	6.8	14.6	11.9	2.8	932
40-44	156.3	2.1	817	20.9	49.4	33.5	17.2	8.2	8.0	17.1	13.4	3.7	742
45-49	156.0	3.0	722	20.6	50.4	34.5	19.6	7.6	7.3	15.1	12.6	2.5	701
Residence													
Total urban	157.0	1.6	3,703	21.0	56.3	28.0	15.9	6.8	5.3	15.7	12.7	3.0	3,390
Asmara	157.7	1.3	1,862	21.6	57.7	23.3	13.4	6.6	3.3	19.1	15.4	3.7	1,730
Other towns	156.4	2.0	1,841	20.5	54.8	33.0	18.6	7.0	7.4	12.2	10.0	2.2	1,659
Rural	155.9	3.0	4,929	19.2	51.9	44.6	24.3	10.5	9.8	3.5	3.1	0.5	4,296
Zoba													
Debubawi Keih Bahri	155.4	3.5	320	20.0	44.4	43.4	19.2	9.9	14.3	12.3	9.7	2.6	287
Maekel	157.7	1.2	2,220	21.2	57.2	26.0	15.2	6.9	3.9	16.8	13.4	3.4	2,035
Semenawi Keih Bahri	154.0	5.4	1,138	19.6	46.7	44.4	20.9	10.7	12.8	8.9	7.1	1.8	1,016
Anseba	156.4	2.9	1,119	19.5	50.2	43.6	23.4	10.0	10.2	6.2	5.4	0.7	991
Gash-Barka	155.2	3.5	1,482	19.5	50.1	43.2	23.9	9.3	10.0	6.7	5.8	0.8	1,296
Debub	157.2	1.1	2,354	19.5	59.4	37.2	22.5	9.0	5.7	3.4	3.0	0.4	2,060
Education													
No education	155.6	3.3	4,329	19.4	51.1	43.0	23.5	9.7	9.7	6.0	5.2	0.8	3,757
Primary	156.6	1.7	1,618	20.3	54.4	34.4	19.5	8.1	6.8	11.2	9.5	1.7	1,438
Middle	157.5	1.0	962	20.1	56.0	35.2	19.2	10.5	5.6	8.8	7.1	1.7	887
Secondary +	157.6	1.6	1,723	21.0	58.7	27.5	15.5	6.6	5.4	13.8	10.5	3.4	1,603
Total	156.4	2.4	8,632	20.0	53.8	37.3	20.6	8.9	7.8	8.9	7.3	1.6	7,685

[1] Excludes pregnant women and women with a birth in the preceding 2 months

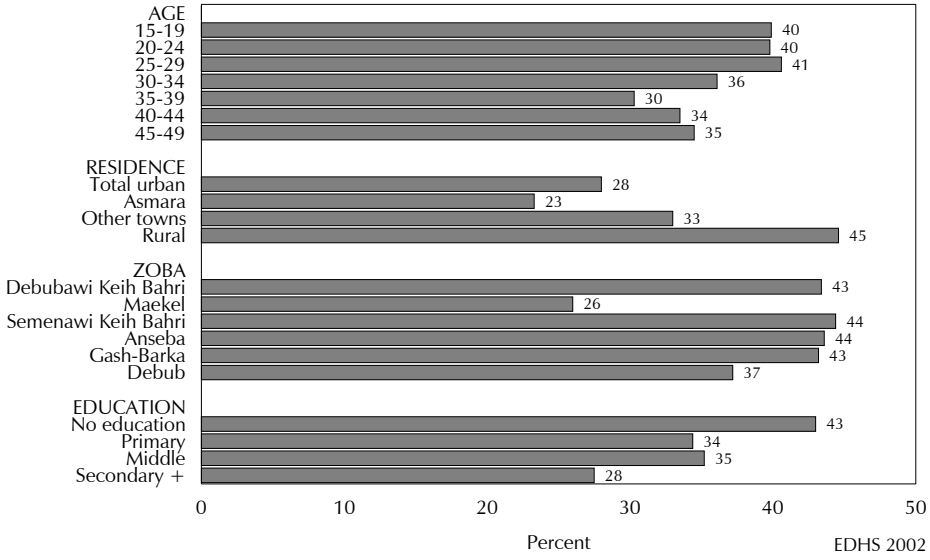
Various indices of body mass are used to assess thinness and obesity. The most commonly used body mass index (BMI)—also known as the Quetelet index—is defined as the weight in kilograms divided by the height squared in meters. A cutoff point of 18.5 has been recommended for defining thinness or chronic energy deficiency. The BMI can also be used to evaluate the percentage of the population that is overweight and obese. A cutoff point of 25.0 has been recommended for defining "overweight." Heart disease, diabetes, and high blood pressure are all linked to being overweight. Someone with a BMI of 26 to 27 is about 20 percent overweight, which is generally believed to carry moderate health risks. A BMI of 30 and higher is considered obese and increases the risk of death.

The mean BMI among measured women was 20. Slightly more than half of women age 15-49 have a normal BMI (18.5-24.9), and 37 percent have a BMI below 18.5, reflecting a nutritional deficit

(Table 10.12). The 2002 EDHS survey found that 9 percent of Eritrean women are overweight, including 2 percent who are severely overweight or obese.

Figure 10.5 and Table 10.12 show that there are large differentials across background characteristics in the percentage of women assessed as malnourished (BMI less than 18.5) or "thin" and overweight (BMI 25 or higher). Four in ten women under age 30 fall below the cutoff of 18.5; thereafter, the proportion of women with chronic energy deficiency drops. Three in ten women age 35-39 and one-third of older women are thin. Rural women are almost 60 percent more likely than urban women to be thin. On the other hand, the proportion of women in urban areas who are overweight and obese is more than four times that of women in rural areas. One in five women in Asmara is either obese (4 percent) or overweight (15 percent). Among zobas, women in Debub and Maekel are the least likely to be thin; more than four in ten women in other zobas have a low BMI (<18.5). Although both zobas Maekel and Debub have lower proportions of women who are considered thin, zoba Maekel (which includes Asmara) has the highest rate of obesity among women age 15-49; zoba Debub has the lowest.

Figure 10.5
Percentage of Women Age 15-49 with Low Body Mass Index (BMI < 18.5) by Background Characteristics



HIV/AIDS AND OTHER SEXUALLY TRANSMITTED INFECTIONS

11

Acquired Immune Deficiency Syndrome (AIDS) is caused by a human immunodeficiency virus (HIV) that weakens the immune system, making the body susceptible to and unable to recover from other diseases.

The HIV/AIDS epidemic has become a serious health and development problem in many countries around the world. The Joint United Nations Programme on HIV/AIDS estimated the number of HIV infections worldwide at about 42 million at the end of 2002, of which 70 percent are found in sub-Saharan Africa (UNAIDS, 2002). Another 20 million people infected with HIV have died from the disease since the beginning of the epidemic—4 million of them were children. Most of these deaths occurred in Africa.

The first AIDS case in Eritrea was identified in 1988 in the port city of Assab in zoba Debubawi Keih Bahri. Since then, the disease has spread throughout the country. By the end of 2001, there were about 13,500 cumulative reported clinical AIDS cases (6 percent were children under 15 years) in Eritrea. These represent a small portion of the total cases because of incomplete and inconsistent reporting. At the same time, an estimated 60,000-70,000 persons are infected by HIV, and an estimated 11,000 deaths have been caused by AIDS (MOH, 2001a). According to the 2001 nationwide behavioral and biological survey in Eritrea, HIV seroprevalence among the five targeted population subgroups is as follows: secondary-school students (0.1 percent), general population (2.4 percent), antenatal clinic attendees (2.8 percent), military personnel (4.6 percent) and bar workers (including prostitutes) (22.8 percent) (MOH, 2001b). The survey showed that the knowledge of HIV/AIDS was nearly universal, with 99 percent of all respondents having heard about AIDS.

The principal mode of HIV transmission in Eritrea is heterosexual contact. HIV infection can also spread through blood and blood products and from HIV-positive mothers to their children during pregnancy, at birth, and through breastfeeding. HIV-negative children of HIV-infected parents are at a great disadvantage because of the health and social consequences of losing one or both parents to AIDS. It is estimated that there are about 1,000 AIDS orphans in Eritrea (UNAIDS, 2002).

The government of Eritrea developed a national policy on HIV/AIDS and sexually transmitted infections (STIs) in 1998. The policy is designed to guide the implementation of successful programs to prevent the spread of HIV/AIDS and STIs. Prevention and control measures include discouraging multiple sexual relationships, promoting the use of condoms among high-risk groups, maintaining a safe blood supply, ensuring safe use of needles, and disseminating information through public campaigns to change social attitudes and behavior.

The response to the epidemic has been collaboration to deal with the problem by government agencies, development partners, nongovernmental organizations, religious groups, individuals, cultural groups, community groups, research institutions, and networks of persons infected and affected by HIV/AIDS. For this purpose, the multisectoral approach of the HAMSET control project was launched. The Government of the State of Eritrea HAMSET (HIV/AIDS, Malaria, STIs, and Tuberculosis (TB)) Control Project, a World Bank financed, five-year mulitsector project launched in 2001, aims at reducing the economic, social, and disease burden caused by the targeted diseases. The desired outcome or impact indicators are a 15 percent reduction of HIV prevalence in the general population as well as target groups by 2006; reduction of the case fatality rate for malaria; and reduced stigma and discrimination against

persons with STIs, TB, and AIDS. The future course of the AIDS epidemic in Eritrea depends on a number of important variables including the level of public awareness about HIV and AIDS, the level and pattern of risk-related behaviors, access to high quality services for STIs, and provision of HIV-testing and counseling.

11.1 KNOWLEDGE OF HIV/AIDS AND ITS PREVENTION

Since there is no cure for AIDS, the main strategy for combating the disease has been prevention through practicing abstinence, being faithful to one sexual partner, and using condoms. This strategy depends heavily on the level of knowledge of the population and their perception of the HIV/AIDS problem. For this reason, the 2002 EDHS sought to measure the levels of knowledge of HIV/AIDS and other sexually transmitted infections in the population and to examine the behaviors women adopt to protect themselves from infection.

In the 2002 EDHS, respondents were asked whether they had heard of AIDS and if so, whether there is anything one can do to avoid getting infected with HIV. Table 11.1 shows that general awareness of AIDS is nearly universal among women in Eritrea, with 96 percent of women reporting that they have heard of AIDS. This figure is consistent with the results of the 2001 survey mentioned earlier. Fewer, but still a large proportion of women report that they think that there is a way to avoid getting AIDS (88 percent). Women living in rural areas and in zoba Gash-Barka are less likely to report that AIDS can be avoided than urban respondents and those living in other zobas. Education is also strongly related to understanding of HIV/AIDS prevention. For example, 99 percent of women who have attended some secondary school or higher education report that HIV/AIDS can be avoided, compared with 79 percent of women who have not attended school.

If respondents reported that AIDS can be avoided, they were asked what a person can do to avoid getting the AIDS virus. Two types of questions were asked about ways to avoid getting HIV/AIDS. First, an open-ended question was asked and respondents were allowed to spontaneously report

Table 11.1 Knowledge of HIV/AIDS

Percentage of women who have heard of HIV/AIDS and percentage who believe there is a way to avoid HIV/AIDS, by background characteristics, Eritrea 2002

Background characteristic	Has heard of AIDS	Believes there is a way to avoid HIV/AIDS	Number of women
Age			
15-19	97.2	92.1	2,001
20-24	96.0	87.9	1,454
25-29	95.8	88.7	1,543
30-39	95.9	87.5	2,194
40-49	95.6	83.6	1,561
Marital status			
Never married	97.9	93.8	2,044
Ever had sex	98.2	94.9	118
Never had sex	97.8	93.7	1,925
Married or living together	95.5	86.2	5,733
Divorced/separated/ widowed	96.0	87.6	977
Residence			
Total urban	99.3	95.9	3,767
Asmara	99.5	96.7	1,899
Other towns	99.1	95.2	1,868
Rural	93.7	82.3	4,987
Zoba			
Debubawi Keih Bahri	85.5	72.8	324
Maekel	99.5	96.4	2,264
Semenawi Keih Bahri	95.4	82.6	1,148
Anseba	97.3	92.2	1,130
Gash-Barka	88.6	68.9	1,500
Debub	98.9	95.3	2,388
Education			
No education	92.7	78.8	4,384
Primary	99.5	96.1	1,637
Middle	99.8	97.4	974
Secondary +	99.5	99.0	1,760
Wealth index			
Lowest	91.0	75.7	1,472
Second	92.8	78.9	1,626
Middle	95.9	86.2	1,674
Fourth	99.4	97.1	1,833
Highest	99.6	97.5	2,149
Total	96.1	88.1	8,754

without prompting all the ways that they knew to avoid HIV/AIDS. Next, women were asked two specific questions. The questions were phrased as follows: "Can people reduce their chances of getting the AIDS virus by using a condom every time they have sex?" and, "Can people reduce their chance of getting the AIDS virus by having just one sex partner who has no other partners?"

Table 11.2 provides the results on AIDS prevention knowledge. These results answer the questions asked in the preceding paragraph. The base for estimates (denominator) is all women interviewed in the 2002 EDHS. The base includes those women who reported that they did not know about HIV/AIDS, those who did not know whether HIV/AIDS could be avoided, and those who failed to mention any specific way to avoid HIV/AIDS. The most frequently reported way to prevent HIV/AIDS was limiting sex to one partner or staying faithful to one partner (72 percent). Condom use and abstaining from sex to prevent AIDS were mentioned by 54 percent and 47 percent, respectively. Although HIV is rarely transmitted by sharing razor blades, 38 percent of the women cited avoidance of this practice. All other means were reported much less frequently; 10 percent mentioned avoidance of injections as a way to prevent HIV/AIDS. The pattern of these responses indicates the relative importance of different ways to prevent HIV infection in the population.

The data on knowledge of HIV/AIDS collected in the 1995 EDHS and the 2002 EDHS are comparable. Between 1995 and 2002, unprompted knowledge of use of condoms to avoid HIV/AIDS rose substantially, from 35 percent to 54 percent. In 1995, 22 percent of women cited sexual abstinence as a ways to prevent HIV/AIDS, compared with 47 percent in 2002. It may be that these sharp increases relate more to greater acceptance of sexual abstinence and condom use as feasible or socially practical behaviors than a change in knowledge per se. This underscores the difficulty in collecting and interpreting data on knowledge of AIDS prevention. It should be recognized that complex and changing psychosocial contextual factors are embedded in the indicator knowledge of HIV/AIDS.

AIDS prevention programs focus their messages and efforts on three important aspects of behavior: use of condoms, restricting sexual behavior (limiting the number of sexual partners, staying faithful to one partner or having just one sex partner who has no other partners), and delaying sexual debut in young persons (i.e., abstinence). Table 11.3 shows the percent distribution of women who reported none, one, and two or three of the programmatically

Table 11.2 Knowledge of ways to avoid HIV/AIDS

Percentage of women who spontaneously mentioned ways to avoid HIV/AIDS, Eritrea 2002

Ways to avoid HIV/AIDS	Percentage of women
Has not heard of AIDS	3.9
Does not know if AIDS can be avoided	4.6
Believes there is no way to avoid AIDS	3.4
Does not know any specific way[1]	0.1
Abstain from sex	47.1
Use condoms	53.9
Limit number of sexual partners	3.7
Limit sex to one partner or stay faithful to one partner	71.7
Avoid sex with prostitutes	6.2
Avoid sex with persons who have many partners	2.0
Avoid sex with homosexuals	0.1
Avoid sex with persons who inject drugs intravenously	0.2
Avoid blood transfusions	6.4
Avoid injections	9.9
Avoid sharing razor or blades	37.7
Avoid kissing	0.4
Avoid mosquito bites	0.8
Seek protection from traditional healer	1.4
Other	1.2
Number of women	8,754

[1] Believes there is something a person can do to avoid AIDS, but cannot spontaneously mention any specific way

Table 11.3 Knowledge of programmatically important ways to avoid HIV/AIDS

Percent distribution of women by knowledge of three programmatically important ways to avoid HIV/AIDS, and percentage of women who know of two specific ways to avoid HIV/AIDS, according to background characteristics, Eritrea 2002

Background characteristic	Knowledge of programmatically important ways to avoid HIV/AIDS					Specific ways to avoid HIV/AIDS		Number of women
	None[1]	One way	Two or three ways	Missing	Total	Use condoms	Restrict sexual behavior[2]	
Age								
15-19	5.5	8.4	86.1	0.1	100.0	78.5	90.9	2,001
20-24	8.9	10.9	80.1	0.0	100.0	72.0	89.1	1,454
25-29	8.6	13.6	77.8	0.1	100.0	69.3	90.1	1,543
30-39	8.9	15.1	76.0	0.0	100.0	63.6	88.5	2,194
40-49	10.9	18.7	70.3	0.1	100.0	58.0	86.8	1,561
Marital status								
Never married	4.4	6.4	89.2	0.0	100.0	81.9	93.0	2,044
Ever had sex	1.8	3.8	93.5	0.9	100.0	89.5	94.4	118
Never had sex	4.5	6.5	88.9	0.0	100.0	81.5	92.9	1,925
Married or living together	9.9	15.9	74.1	0.0	100.0	63.4	87.8	5,733
Divorced/separated/widowed	8.5	11.6	79.7	0.2	100.0	69.4	89.2	977
Residence								
Total urban	1.9	6.6	91.3	0.1	100.0	84.0	96.4	3,767
Asmara	1.0	4.4	94.4	0.2	100.0	88.9	97.7	1,899
Other towns	2.8	8.8	88.2	0.1	100.0	79.0	95.0	1,868
Rural	13.4	18.2	68.4	0.0	100.0	56.6	83.7	4,987
Zoba								
Debubawi Keih Bahri	22.0	14.3	63.6	0.2	100.0	58.2	76.2	324
Maekel	1.1	5.3	93.4	0.2	100.0	88.1	97.4	2,264
Semenawi Keih Bahri	12.4	24.6	63.0	0.0	100.0	47.0	83.5	1,148
Anseba	6.5	14.0	79.5	0.0	100.0	59.7	91.9	1,130
Gash-Barka	25.0	21.9	53.1	0.0	100.0	45.7	71.1	1,500
Debub	2.1	9.3	88.5	0.0	100.0	79.8	95.9	2,388
Education								
No education	15.8	21.4	62.8	0.0	100.0	49.4	81.2	4,384
Primary	2.1	8.3	89.6	0.0	100.0	81.6	95.4	1,637
Middle	0.6	4.2	95.1	0.1	100.0	89.4	97.9	974
Secondary +	0.4	2.5	96.9	0.2	100.0	91.9	98.2	1,760
Wealth index								
Lowest	19.9	21.9	58.2	0.0	100.0	42.4	76.2	1,472
Second	15.3	20.6	64.0	0.0	100.0	51.6	82.0	1,626
Middle	9.2	16.6	74.3	0.0	100.0	65.6	87.9	1,674
Fourth	1.3	6.9	91.7	0.1	100.0	82.7	96.9	1,833
Highest	0.9	4.5	94.5	0.1	100.0	89.0	97.8	2,149
Total	8.4	13.2	78.3	0.1	100.0	68.4	89.1	8,754

Note: Programmatically important ways are abstaining from sex, using condoms, and limiting the number of sexual partners. Abstinence from sex is measured from a spontaneous response only, and using condoms and limiting the number of sexual partners is measured from spontaneous and probed responses.

[1] Those who have not heard of HIV/AIDS or do not know of any programmatically important ways to avoid HIV/AIDS.

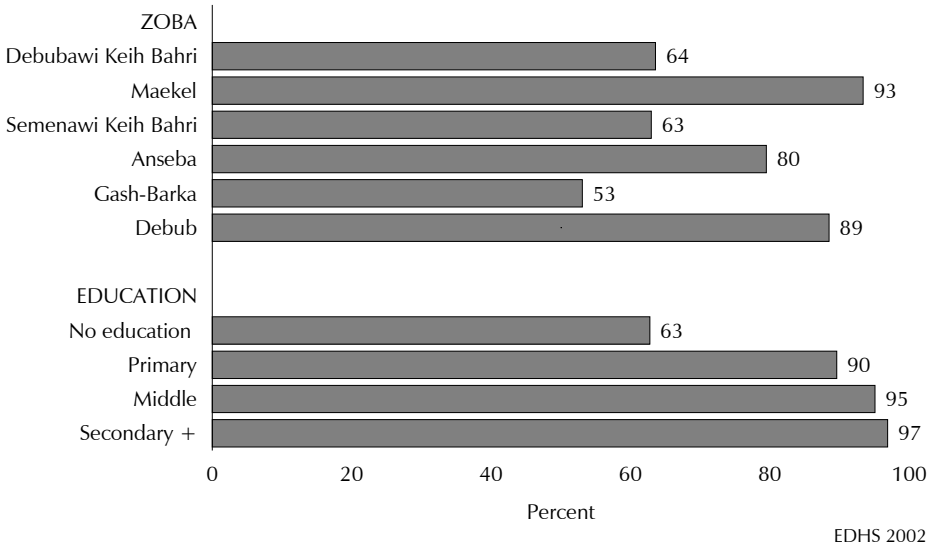
[2] Refers to limiting number of sexual partners, limiting sex to one partner/staying faithful to one partner, and having just one partner who has no other partners.

important ways to avoid AIDS (spontaneous or prompted). Seventy-eight percent of women know of two or three effective ways to avoid infection with HIV.

Sixty-eight percent of rural women know of two or three ways, compared with 91 percent of urban women. Other factors that are related to knowledge of ways to prevent HIV infection include age, sexual activity, education, and household wealth. Differentials by zoba and education are striking (Figure 11.1). Among zobas, knowledge of at least two ways to avoid infection with HIV/AIDS varies from 53 percent to 93 percent. By education, 97 percent of women with at least secondary education know two or three ways of AIDS prevention, compared with 63 percent of women with no schooling. Older respondents (age 40-49) and those who are married or living together know fewer AIDS prevention methods than younger women and those who have never married (Table 11.3).

Women's knowledge (spontaneously and prompted) of two specific ways to avoid HIV/AIDS—condom use and restricting sexual behavior—is shown in Table 11.3. With the inclusion of prompted knowledge, knowledge of condom use for HIV/AIDS protection rises from 54 percent (unprompted) to 68 percent. Similarly, after prompting, 89 percent of women agree that limiting the number of partners and staying faithful to one partner or having just one partner who has no other partners are ways to avoid HIV/AIDS.

Figure 11.1
Percentage of Women Who Know at Least Two Programmatically Important Ways to Avoid HIV/AIDS, by Zoba and Education



11.2 KNOWLEDGE OF OTHER AIDS-RELATED ISSUES

In addition to asking questions about ways to prevent HIV/AIDS, the respondents who had heard about AIDS were asked whether they agreed or disagreed with some statements about AIDS-related issues. Table 11.4 shows the distribution of women by their responses to questions intended to evaluate important aspects of their knowledge of HIV/AIDS. When asked whether a healthy-looking person can have the AIDS virus, 76 percent of women correctly responded "yes." This represents an increase in knowledge from 1995, when 59 percent of women responded correctly to the same question.

Table 11.4 Knowledge of HIV/AIDS-related issues

Percentage of women who know various HIV/AIDS-related issues, according to background characteristics, Eritrea 2002

Background characteristic	Percentage who say a healthy-looking person can have the AIDS virus	Percentage who say HIV/AIDS can be transmitted from mother to child:			Percentage who know someone personally who has the virus that causes AIDS or has died of AIDS	Number of women
		During delivery	During pregnancy	Through breast-feeding		
Age						
15-19	80.3	74.4	82.7	75.0	40.4	2,001
20-24	76.8	71.9	79.8	68.6	35.8	1,454
25-29	76.8	73.4	80.9	70.6	39.2	1,543
30-39	73.3	71.0	79.2	66.6	35.0	2,194
40-49	70.3	68.7	77.7	68.1	34.7	1,561
Marital status						
Never married	84.3	77.1	85.2	74.6	45.5	2,044
Ever had sex	88.1	74.9	88.6	81.7	50.7	118
Never had sex	84.1	77.3	85.0	74.2	45.2	1,925
Married or living together	72.7	70.2	78.3	68.0	33.5	5,733
Divorced/separated/widowed	74.0	71.2	80.5	70.7	40.7	977
Residence						
Total urban	88.5	79.8	89.5	74.1	52.1	3,767
Asmara	92.5	81.3	92.7	72.8	58.4	1,899
Other towns	84.5	78.3	86.4	75.5	45.7	1,868
Rural	65.8	66.0	73.0	66.6	25.8	4,987
Zoba						
Debubawi Keih Bahri	62.5	65.7	71.9	66.2	37.4	324
Maekel	91.9	81.7	92.6	74.1	56.8	2,264
Semenawi Keih Bahri	60.5	62.2	69.7	63.9	14.9	1,148
Anseba	74.7	74.7	83.0	73.5	23.0	1,130
Gash-Barka	50.0	50.6	58.0	50.2	17.0	1,500
Debub	85.7	80.2	87.0	79.8	48.3	2,388
Education						
No education	60.8	61.9	69.3	62.6	21.4	4,384
Primary	84.7	79.4	88.7	77.2	42.4	1,637
Middle	91.0	83.4	92.9	81.6	52.6	974
Secondary +	95.4	83.5	92.0	74.5	62.6	1,760
Wealth index						
Lowest	55.3	57.7	63.6	59.0	14.0	1,472
Second	61.2	62.3	70.7	65.3	23.3	1,626
Middle	71.0	70.6	77.4	69.4	29.2	1,674
Fourth	88.9	80.8	89.3	75.4	48.8	1,833
Highest	92.5	82.4	92.9	76.4	59.5	2,149
Total	75.6	71.9	80.1	69.8	37.1	8,754

The 2002 EDHS survey included some questions on transmission of AIDS virus from mother to child, which were not asked in the 1995 survey. The respondents were asked whether they thought that the AIDS virus could be transmitted from a mother to her child during pregnancy, during delivery, and during breastfeeding. The results indicate that eight in ten women responded "yes," to transmission of infection during pregnancy, but only seven in ten women gave an affirmative answer to the other two modes of mother-to-child transmission. In addition, respondents were asked the question: "Do you personally know someone who has the AIDS virus or who has died from AIDS?" Thirty-seven percent of women reported that they knew someone with the AIDS virus or who died from AIDS.

Women in the lowest quintile of the wealth index, women with no education, women in rural areas, women who are married or living together, and women in the older age group, are least knowledgeable about AIDS-related issues. These women are also least likely to know somebody who has the virus that causes AIDS or has died of AIDS. On the other hand, women most likely to respond correctly to these AIDS-related questions are young women, sexually inexperienced women, urban women, women from zobas Maekel and Debub, highly educated women, and women in the higher quintiles of the wealth index.

11.3 SOCIAL ASPECTS OF HIV/AIDS PREVENTION AND MITIGATION

In the 2002 EDHS survey, currently married women who had heard of AIDS were asked whether they had ever discussed AIDS prevention with their spouse or partner. Table 11.5 indicates that 37 percent of women have had such a discussion with their partners. Higher level of education is associated with greater communication between spouses about AIDS prevention (75 percent). Urban women are twice as likely to discuss HIV/AIDS with their spouses as women in rural areas. Differences among zobas are also large. Women in zoba Maekel are four times as likely to discuss HIV/AIDS with their spouses as women in zoba Semenawi Keih Bahri.

Table 11.5 Discussion of HIV/AIDS with partner

Percent distribution of currently married women by whether they had ever discussed HIV/AIDS prevention with their husband or partner, according to background characteristics, Eritrea 2002

Background characteristic	Discussed HIV/AIDS prevention with husband/ partner	Never discussed HIV/AIDS prevention with husband/ partner	Don't know/ missing	Has not heard of AIDS	Total Total	Number of women
Age						
15-19	32.2	63.5	0.0	4.2	100.0	580
20-24	35.5	59.8	0.2	4.5	100.0	950
25-29	42.4	53.0	0.1	4.5	100.0	1,212
30-39	38.9	56.8	0.0	4.2	100.0	1,803
40-49	30.5	64.8	0.0	4.6	100.0	1,189
Residence						
Total urban	55.0	44.1	0.2	0.8	100.0	1,967
Asmara	69.5	29.8	0.3	0.4	100.0	868
Other towns	43.6	55.4	0.1	1.0	100.0	1,099
Rural	27.1	66.6	0.0	6.3	100.0	3,766
Zoba						
Debubawi Keih Bahri	27.6	55.3	0.3	16.8	100.0	210
Maekel	65.7	33.7	0.2	0.3	100.0	1,103
Semenawi Keih Bahri	15.9	78.8	0.0	5.3	100.0	817
Anseba	33.7	63.5	0.0	2.8	100.0	784
Gash-Barka	24.2	64.2	0.1	11.6	100.0	1,142
Debub	38.7	60.3	0.0	1.0	100.0	1,677
Education						
No education	22.2	70.9	0.0	6.9	100.0	3,549
Primary	50.8	48.8	0.0	0.4	100.0	1,075
Middle	59.4	40.6	0.0	0.0	100.0	400
Secondary +	74.8	24.3	0.3	0.5	100.0	709
Wealth index						
Lowest	15.8	75.1	0.1	9.0	100.0	1,161
Second	24.2	68.6	0.0	7.2	100.0	1,215
Middle	29.5	66.3	0.0	4.2	100.0	1,224
Fourth	54.3	45.1	0.0	0.6	100.0	1,079
Highest	64.3	35.1	0.3	0.4	100.0	1,053
Total	36.7	58.8	0.1	4.4	100.0	5,733

Fear of public disclosure has been seen as a major barrier to HIV-testing and programs aimed at assisting people living with HIV and their families. Table 11.6 provides responses to questions that evaluate the level of stigma attached to AIDS and to persons living with HIV and AIDS in Eritrea. Respondents were asked, "If a member of your family got infected with the virus that causes AIDS, would you want it to remain a secret or not?" Among women who know about AIDS, only 16 percent said they would want the HIV-positive status of a relative to remain secret.

Table 11.6 Social aspects of HIV/AIDS

Among women who have heard of AIDS, percentage giving specific responses to questions on two social aspects of HIV/AIDS, by background characteristics, Eritrea 2002

Background characteristic	Women who have heard of HIV/AIDS: Believe HIV-positive status of family member should be kept secret	Women who have heard of HIV/AIDS: Not willing to care for relative with AIDS at home	Number of women
Age			
15-19	16.2	19.5	1,945
20-24	18.6	23.9	1,396
25-29	15.0	25.8	1,478
30-39	15.8	27.5	2,104
40-49	13.6	30.4	1,493
Marital status			
Never married	16.6	14.6	2,000
Ever had sex	17.0	14.2	116
Never had sex	16.6	14.6	1,884
Married or living together	15.8	29.7	5,478
Divorced/separated/widowed	14.6	22.4	938
Residence			
Total urban	15.4	14.9	3,741
Asmara	16.4	9.9	1,889
Other towns	14.4	20.0	1,852
Rural	16.2	33.6	4,675
Zoba			
Debubawi Keih Bahri	12.2	18.8	277
Maekel	16.9	10.2	2,253
Semenawi Keih Bahri	10.9	42.8	1,095
Anseba	14.7	33.8	1,100.0
Gash-Barka	20.1	36.5	1,329
Debub	15.7	22.0	2,362
Education			
No education	15.8	36.4	4,065
Primary	15.4	24.9	1,629
Middle	14.4	10.6	972
Secondary +	17.1	8.0	1,751
Wealth index			
Lowest	16.0	41.7	1,339
Second	14.9	37.8	1,509
Middle	15.6	30.6	1,606
Fourth	16.9	15.1	1,821
Highest	15.7	10.9	2,141
Total	15.8	25.3	8,416

Programs designed to assist in the support and care of AIDS-affected persons can be hindered by fear of association with HIV and AIDS. In Eritrea, women who were aware of AIDS were asked, "If a relative of yours became sick with AIDS, would you be willing to care for her or him in your own household?" Only one-fourth of women responded that they would not be willing to take care of a relative who had AIDS. Willingness to care for a relative with AIDS at home is highest among young women, urban women, women with higher education, and women in the highest wealth quintile.

11.4 KNOWLEDGE OF SIGNS AND SYMPTOMS OF SEXUALLY TRANSMITTED INFECTIONS

Sexually transmitted infections (STIs) are believed to be a predisposing factor for HIV/AIDS transmission. As such, the presence of STIs in a population increases the likelihood of the occurrence of HIV. AIDS prevention programs should therefore also address the prevention and treatment of STIs. Three questions were included in the 2002 EDHS to assess the level of awareness of STIs among women and their knowledge of the symptoms of STIs in men and in women.

Table 11.7 shows knowledge of symptoms of STIs in a man and in a woman. Fifty-eight percent of women in Eritrea report that they have no knowledge of STIs. One in ten women do not know any of the symptoms of STIs in a man, while 7 percent of women mentioned only one symptom, and one-fourth mentioned at least two symptoms. A similar pattern is seen for knowledge of symptoms of STIs in a woman. One in ten women do not know any symptoms of STIs in a woman, 6 percent know only one symptom, and 27 percent know two or more symptoms. Surprisingly, there is little difference in knowledge by age. Knowledge of STIs and symptoms of STIs is especially low among women with no education and women in zoba Semenawi Keih Bahri (Figure 11.2). Women in rural areas and those who are married or living with a man also have very low levels of knowledge of STIs and symptoms of STIs (Table 11.7).

Figure 11.2
Percentage of Women Who Know at Least One Symptom of Sexually Transmitted Infections (STIs) in Men

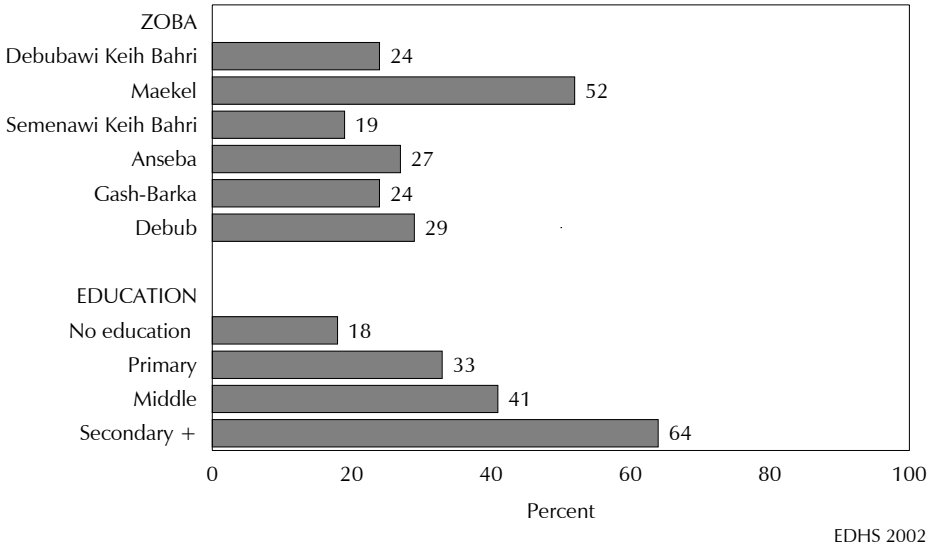


Table 11.7 Knowledge of symptoms of STIs

Percent distribution of women by knowledge of symptoms of sexually transmitted infections (STIs) in a man and by knowledge of STIs in a woman, according to background characteristics, Eritrea 2002

Background characteristic	No knowledge of STIs	Knowledge of symptoms of STIs in a man: No symptoms mentioned	One symptom mentioned	Two or more symptoms mentioned	Missing	Knowledge of symptoms of STIs in a woman: No symptoms mentioned	One symptom mentioned	Two or more symptoms mentioned	Missing	Number of women
Age										
15-19	60.0	9.2	7.9	22.8	0.1	10.1	6.0	23.9	0.1	2,001
20-24	57.6	10.2	6.0	25.9	0.3	10.5	4.5	27.2	0.3	1,454
25-29	54.8	10.6	5.3	29.3	0.1	10.7	4.7	29.8	0.1	1,543
30-39	58.8	8.5	7.3	25.4	0.0	9.0	5.8	26.5	0.0	2,194
40-49	57.8	9.3	7.0	25.7	0.2	8.0	6.3	27.7	0.2	1,561
Marital status										
Never married	48.4	11.9	10.1	29.3	0.2	13.0	7.3	31.1	0.2	2,044
Ever had sex	28.2	12.4	15.8	41.9	1.8	18.6	6.2	45.3	1.8	118
Never had sex	49.6	11.9	9.8	28.6	0.1	12.6	7.4	30.2	0.1	1,925
Married or living together	62.2	8.5	5.7	23.5	0.0	8.4	4.9	24.4	0.0	5,733
Divorced/separated/widowed	53.1	10.0	6.2	30.5	0.2	9.5	5.4	31.9	0.2	977
Residence										
Total urban	38.3	13.0	10.1	38.4	0.2	13.6	8.2	39.7	0.2	3,767
Asmara	29.4	15.1	10.3	45.0	0.3	16.1	7.6	46.7	0.3	1,899
Other towns	47.4	10.9	10.0	31.6	0.1	11.0	8.8	32.7	0.1	1,868
Rural	72.8	6.8	4.3	16.0	0.0	6.6	3.5	17.0	0.0	4,987
Zoba										
Debubawi Keih Bahri	69.0	6.7	4.3	19.9	0.2	6.4	4.0	20.5	0.2	324
Maekel	33.4	14.5	9.7	42.2	0.3	15.3	7.2	43.9	0.3	2,264
Semenawi Keih Bahri	76.4	4.3	4.3	14.9	0.0	4.8	3.7	15.1	0.0	1,148
Anseba	64.5	8.2	4.1	23.2	0.0	8.3	3.3	23.9	0.0	1,130
Gash-Barka	70.1	6.1	4.2	19.4	0.1	6.2	3.9	19.7	0.1	1,500
Debub	60.2	10.3	8.5	20.9	0.0	9.7	7.1	23.0	0.0	2,388
Education										
No education	76.7	5.6	3.5	14.2	0.1	5.5	3.1	14.7	0.1	4,384
Primary	56.5	10.4	6.8	26.2	0.0	10.4	5.5	27.6	0.0	1,637
Middle	46.4	12.7	8.5	32.3	0.1	13.9	7.6	32.0	0.1	974
Secondary +	19.1	16.5	14.1	50.0	0.3	16.8	10.4	53.4	0.3	1,760
Total	58.0	9.5	6.8	25.6	0.1	9.6	5.5	26.8	0.1	8,754

11.5 KNOWLEDGE OF SOURCE AND USE OF CONDOMS

Condom use plays an important role in preventing the transmission of HIV/AIDS. Table 11.8 shows data on knowledge and use of condoms. Fifty-four percent of women know a source for condoms. Younger women, never-married women who ever had sex, urban women, women in zoba Maekel, and those with higher education are more likely to know a source of condoms than other women. Knowledge of a source for condoms is positively correlated with education. Table 11.8 shows the percentage of women who had sexual intercourse in the 12 months preceding the survey who used condoms during the most recent sexual intercourse, by background characteristics. The use of condoms is negligible among

Eritrean women (2 percent). However, never-married women who have ever had sex are more likely to have used condoms (36 percent) than other women, although the sample size is small.

Table 11.8 Knowledge of source and use of condoms

Percentage of women who know a source for condoms and among women who had sexual intercourse in the last year, percentage who used a condom during the most recent sexual intercourse, by background characteristics, Eritrea 2002

Background characteristic	Knows source for condoms	Number of women	Percentage who used a condom at last sex	Number of women
Age				
15-19	65.5	2,001	2.9	560
20-24	57.4	1,454	1.5	837
25-29	57.6	1,543	2.5	1,072
30-39	48.4	2,194	1.6	1,706
40-49	40.2	1,561	0.6	1,147
Marital status				
Never married	75.6	2,044	(36.4)	47
Ever had sex	83.0	118	(36.4)	47
Never had sex	75.2	1,925	na	na
Married or living together	46.3	5,733	1.2	5,121
Divorced/separated/ widowed	53.3	977	7.6	153
Residence				
Total urban	79.7	3,767	3.8	1,836
Asmara	84.3	1,899	4.4	815
Other towns	75.2	1,868	3.4	1,021
Rural	34.5	4,987	0.5	3,485
Zoba				
Debubawi Keih Bahri	53.1	324	4.3	200
Maekel	80.5	2,264	3.5	1,035
Semenawi Keih Bahri	37.8	1,148	1.1	768
Anseba	45.6	1,130	1.9	737
Gash-Barka	30.4	1,500	0.9	1,088
Debub	55.4	2,388	0.8	1,493
Education				
No education	28.8	4,384	0.4	3,282
Primary	64.8	1,637	2.4	1,004
Middle	79.3	974	3.5	381
Secondary +	92.5	1,760	5.9	655
Total	54.0	8,754	1.7	5,321

Note: Figures in parentheses are based on 25-49 unweighted cases.
na = Not applicable

FEMALE CIRCUMCISION 12

The 1995 EDHS was the first national-level survey in Eritrea that included questions about the practice of female circumcision. Nowadays this practice is also called female genital cutting (FGC); in this chapter these two terms are used interchangeably. The 1995 survey found that the practice was very widespread in Eritrea. In the 2002 EDHS, information was collected to further investigate prevalence of and attitudes toward FGC among Eritrean women and to assess whether there is evidence of changes in attitudes or behavior since 1995.

Female genital cutting (FGC) is a term used for a variety of types of ritual surgery carried out on female genitals for traditional, religious, and aesthetic reasons, and usually backed by social pressure. The negative consequences of FGC can be immediate, with long-term health risks and complications.

Although variations exist, there are three generally recognized types of circumcision: clitoridectomy, excision, and infibulation. Clitoridectomy is the removal of the prepuce with or without excision of all or part of the clitoris. Excision is the removal of the prepuce and clitoris along with all or part of the labia minora. Infibulation (also called "pharaonic circumcision") is the most severe form of female circumcision. It consists of removal of all or part of the external genitalia, followed by joining together of the two sides of the labia majora using threads, thorns, or other materials to narrow the vaginal opening (WHO, 1996). The types of circumcision are not strictly defined and categorization may not be exact because of variations in the procedure used by practitioners. For this reason unlike the 1995 EDHS, the names of these categories were not used in the 2002 EDHS questionnaire; rather respondents were asked about the severity of their operations.

12.1 CIRCUMCISION OF EDHS RESPONDENTS

Knowledge and Prevalence

Results from the 2002 EDHS show that knowledge of female circumcision is almost universal among Eritrean women. Table 12.1 indicates that almost all respondents (99 percent) have heard of female genital cutting.

FGC is very common in Eritrea; 89 percent of women reported that they had been circumcised, a decline of 6 percent since 1995. There has been a slight decline in prevalence in all subgroups shown in Table 12.1. However, the decline is most notable among younger women (under 25) and among women in zoba Debub. As in 1995, by residence, there is almost no difference between other towns (89 percent) and rural areas (91 percent) in the prevalence of circumcision; prevalence remains lowest in Asmara (83 percent). The practice of female circumcision is somewhat lower in zobas Maekel and Debub than in other zobas. By wealth index, the practice decreases from 94 percent among women in the lowest quintile to 84 percent among women in the highest quintile.

Type of Circumcision

The percent distribution of circumcised women by type of circumcision or severity of circumcision is shown in Table 12.1 and Figure 12.1. Thirty-nine percent of circumcised women had their vaginal area sewn closed (the most severe form of circumcision), while a small proportion (4 percent) had only some genital flesh removed, and 46 percent were just nicked with no flesh removed from genitals (the least severe form of circumcision). For 11 percent of women the type of circumcision could not be

determined. Urban women in general, and women in Asmara in particular, are less likely to have their vaginal area sewn closed than women in rural areas. More than half (52 percent) of circumcised women in rural areas compared with only 6 percent in Asmara had their vaginal area sewn closed. In urban areas, 56 percent of circumcised women were nicked with no flesh removed, compared with 39 percent of women in rural areas. The most severe form of circumcision is least prevalent in zobas Maekel and Debub (5 percent and 11 percent, respectively). In other zobas, this type of circumcision is extremely high, ranging from 57 percent in Debubawi Keih Bahri to 78 percent in Semenawi Keih Bahri.

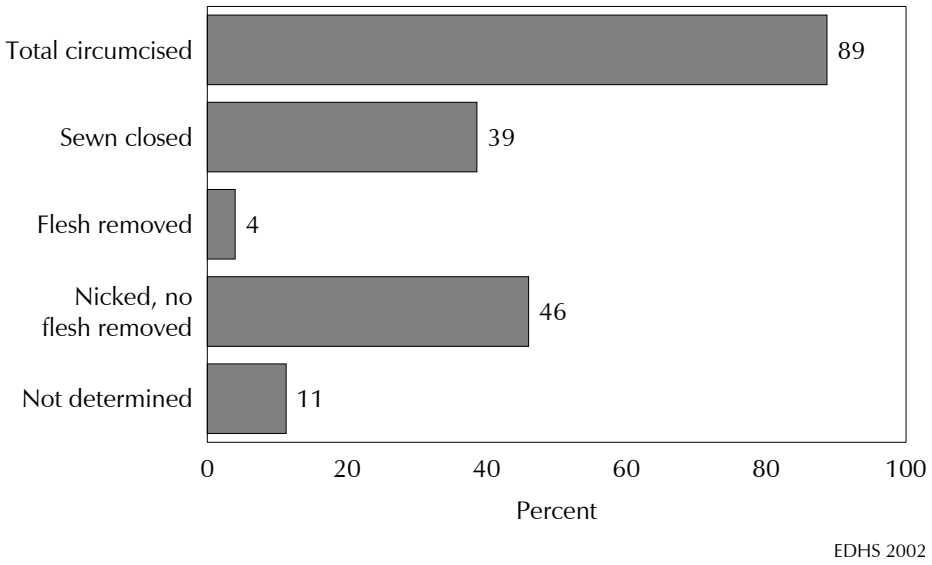
Table 12.1 Knowledge and prevalence of female circumcision

Percentage of women who have heard of female circumcision, percentage of women circumcised, and the percent distribution of circumcised women by type of circumcision, according to background characteristics, Eritrea 2002

Background characteristic	Percentage of women who have heard of female circumcision	Percentage of women circumcised	Number of women	Type of circumcision					
				Sewn closed	Flesh removed	Nicked, no flesh removed	Not determined	Total	Number of women
Age									
15-19	97.9	78.3	2,001	33.8	4.1	49.7	12.5	100.0	1,568
20-24	99.3	87.9	1,454	41.1	3.9	44.6	10.4	100.0	1,279
25-29	99.6	90.8	1,543	37.3	4.9	45.9	11.9	100.0	1,402
30-34	99.8	93.4	1,109	42.5	3.6	42.3	11.6	100.0	1,036
35-39	99.6	92.6	1,085	40.0	3.5	45.7	10.8	100.0	1,005
40-44	99.9	94.1	827	42.0	3.7	44.1	10.2	100.0	779
45-49	99.7	95.0	734	35.8	4.8	48.4	10.9	100.0	697
Residence									
Total urban	99.2	86.4	3,767	20.7	6.5	55.6	17.2	100.0	3,254
Asmara	99.0	83.4	1,899	5.5	11.0	56.4	27.1	100.0	1,584
Other towns	99.5	89.4	1,868	35.1	2.3	54.8	7.8	100.0	1,669
Rural	99.2	90.5	4,987	51.5	2.3	39.1	7.1	100.0	4,511
Zoba									
Debubawi Keih Bahri	99.6	92.2	324	56.5	0.3	39.8	3.3	100.0	299
Maekel	98.9	83.5	2,264	4.7	11.0	57.8	26.4	100.0	1,891
Semenawi Keih Bahri	100.0	97.7	1,148	78.1	2.2	17.9	1.8	100.0	1,121
Anseba	99.9	96.4	1,130	68.7	1.0	27.4	2.9	100.0	1,090
Gash-Barka	99.5	94.6	1,500	63.3	1.6	32.1	3.0	100.0	1,419
Debub	98.6	81.5	2,388	11.1	2.6	72.1	14.2	100.0	1,946
Wealth index									
Lowest	99.5	94.0	1,472	74.8	1.7	20.9	2.6	100.0	1,383
Second	98.9	91.4	1,626	56.8	1.7	36.2	5.4	100.0	1,487
Middle	99.1	88.5	1,674	42.2	2.6	46.4	8.7	100.0	1,482
Fourth	99.4	87.3	1,833	18.0	5.9	60.7	15.4	100.0	1,600
Highest	99.2	84.3	2,149	11.3	7.5	59.9	21.3	100.0	1,813
Total	99.2	88.7	8,754	38.6	4.1	46.0	11.3	100.0	7,765

Note: The total excludes one woman with missing information on whether circumcised.

Figure 12.1
Distribution of Circumcised Women by Type of Circumcision



EDHS 2002

Age at Circumcision for Respondents

Table 12.2 shows the percent distribution of circumcised women by age at circumcision. Sixty-two percent of circumcised women reported that they were circumcised before their first birthday, including one-half (49 percent) who were circumcised when they were one month of age or younger. One in six women was circumcised at five years of age or older. Urban women are more likely to be circumcised at an early age than women in rural areas. Age at circumcision by zoba shows differences in the timing of circumcising. The majority of women in zobas Debubawi Keih Bahri, Maekel, and Debub were circumcised within the first 30 days after birth, while the majority of women in other zobas were circumcised after infancy—most commonly after 5 years of age.

Table 12.2 Age at circumcision

Percent distribution of circumcised women by age at circumcision, according to background characteristics, Eritrea 2002

Background characteristic	Age at circumcision								Total	Number of women
	<8 days	8-30 days	One month	2-11 months	1-2 years	3-4 years	5+ years	Missing/ don't know		
Age										
15-19	13.7	17.4	13.4	19.2	6.9	6.9	14.3	8.1	100.0	1,568
20-24	15.0	17.3	11.8	16.2	4.8	9.8	17.1	7.9	100.0	1,279
25-29	20.6	17.7	13.0	11.9	4.2	7.7	15.6	9.2	100.0	1,402
30-34	16.4	19.7	12.8	11.4	5.4	8.6	17.3	8.4	100.0	1,036
35-39	19.9	20.1	11.2	11.5	3.7	7.3	17.1	9.3	100.0	1,005
40-44	17.0	21.0	10.6	9.6	4.4	8.8	18.4	10.2	100.0	779
45-49	23.0	21.7	12.9	9.6	2.5	7.5	14.5	8.4	100.0	697
Residence										
Total urban	22.3	22.7	14.4	15.9	4.1	3.7	7.6	9.2	100.0	3,254
Asmara	22.9	28.6	18.0	16.9	2.8	0.3	1.3	9.1	100.0	1,584
Other towns	21.7	17.1	11.1	14.9	5.4	6.9	13.6	9.3	100.0	1,669
Rural	14.0	16.0	10.9	11.8	5.3	11.2	22.4	8.3	100.0	4,511
Zoba										
Debubawi Keih Bahri	40.1	15.4	10.1	10.4	13.3	3.0	1.2	6.5	100.0	299
Maekel	22.0	29.0	18.8	17.3	2.6	0.4	1.1	8.8	100.0	1,891
Semenawi Keih Bahri	14.0	5.8	3.9	7.1	6.3	12.1	40.1	10.8	100.0	1,121
Anseba	7.4	12.4	8.9	11.3	4.1	15.6	31.0	9.3	100.0	1,090
Gash-Barka	9.6	9.3	5.5	8.3	9.0	20.0	30.1	8.2	100.0	1,419
Debub	22.9	27.6	18.4	19.1	2.2	0.9	0.9	7.8	100.0	1,946
Total	17.5	18.8	12.4	13.5	4.8	8.0	16.2	8.7	100.0	7,765

Person Who Performed Circumcision

Table 12.3 shows the percent distribution of circumcised women by type of person who performed the circumcision. The risks of complications and infections with female genital cutting are a function of the conditions under which the surgery is performed and the cleanliness of the instruments used for circumcising. In the 2002 EDHS, circumcised women were asked who had performed their circumcision, to indirectly gauge exposure to these risks. Special persons, circumcision practitioners, perform the vast majority of female circumcisions in Eritrea. Eighty-four percent were performed by circumcision practitioners and 8 percent by traditional birth attendants (TBAs). Five percent of women did not know who performed the procedure. The number of circumcisions performed by trained health professionals is very small, less than 1 percent. The most notable fact in Table 12.3 is that, although TBAs performed less than 10 percent of circumcisions, they are more likely to perform the two most severe types of circumcisions. Some people believe that non-health workers who perform circumcisions have a financial interest in the continuation of the practice; therefore, it may be practical to use health workers to dissuade people from circumcising their daughters.

Table 12.3 Person who performed female circumcision

Percent distribution of circumcised women by type of person who performed circumcision, according to background characteristics, Eritrea 2002

Background characteristic	Type of person who performed circumcision							Number of circumcised women
	Doctor	Trained nurse/ midwife	TBA	Circum-cision practitioner	Other	Missing/ don't know	Total	
Type of Circumcision								
Sewn closed	0.1	0.4	11.9	81.6	2.6	3.4	100.0	2,997
Flesh removed	0.0	1.0	18.2	73.5	2.7	4.7	100.0	318
Nicked, no flesh removed	0.1	0.5	5.7	86.5	1.9	5.3	100.0	3,572
Not determined	0.1	0.3	4.2	83.7	2.9	8.8	100.0	879
Age								
15-19	0.2	1.0	8.1	83.6	1.9	5.1	100.0	1,568
20-24	0.2	0.4	7.8	85.1	2.2	4.2	100.0	1,279
25-29	0.2	0.5	7.7	84.0	2.7	4.9	100.0	1,402
30-34	0.0	0.1	7.2	84.5	3.3	5.0	100.0	1,036
35-39	0.0	0.5	9.7	82.6	2.4	4.9	100.0	1,005
40-44	0.0	0.1	9.7	83.6	2.0	4.6	100.0	779
45-49	0.0	0.2	10.5	81.6	1.6	6.0	100.0	697
Residence								
Total urban	0.3	0.7	6.6	85.0	1.6	5.8	100.0	3,254
Asmara	0.5	1.2	5.0	84.8	1.5	7.0	100.0	1,584
Other towns	0.1	0.3	8.1	85.2	1.7	4.7	100.0	1,669
Rural	0.0	0.3	9.7	82.8	2.9	4.3	100.0	4,511
Zoba								
Debubawi Keih Bahri	0.0	0.5	11.1	84.8	0.6	3.0	100.0	299
Maekel	0.5	1.0	6.1	84.3	1.6	6.5	100.0	1,891
Semenawi Keih Bahri	0.0	0.1	10.3	82.7	3.1	3.7	100.0	1,121
Anseba	0.0	1.0	11.3	80.9	1.5	5.3	100.0	1,090
Gash-Barka	0.0	0.2	7.1	88.1	1.2	3.4	100.0	1,419
Debub	0.0	0.0	8.5	82.1	4.2	5.3	100.0	1,946
Total	0.1	0.5	8.4	83.8	2.3	4.9	100.0	7,765

TBA = Traditional birth attendant

12.2 CIRCUMCISION EXPERIENCE OF DAUGHTERS

Prevalence and Type of Circumcision

Women interviewed in the survey who had living daughters were asked if any of their daughters had been circumcised, and if yes, how many. Then questions were asked about the most recently circumcised daughter, that is, type of circumcision, age at circumcision, and the person who performed the circumcision. Table 12.4 shows the percentage of women who have at least one circumcised daughter and the percent distribution of the most recently circumcised daughters by type of circumcision, according to background characteristics. Overall, 63 percent of women reported that at least one of their daughters had been circumcised, indicating a slight decline since 1995. In the 1995 EDHS, the questions about daughter's circumcision were asked for the eldest daughter, 71 percent of whom were circumcised.

Table 12.4 Daughter's circumcision experience and type of circumcision

Percentage of women with at least one living circumcised daughter, and percent distribution of most recently circumcised daughters by type of circumcision, according to mother's background characteristics, Eritrea 2002

Mother's background characteristic	Percentage of women with at least one circumcised daughter	Number of women	Type of circumcision				Total	Number of women
			Sewn closed	Flesh removed	Nicked, no flesh removed	Not determined		
Type of circumcision								
Sewn closed	73.0	1,689	84.3	3.0	11.7	0.9	100.0	1,234
Flesh removed	59.3	161	9.4	73.5	12.1	5.0	100.0	95
Nicked, no flesh removed	64.1	1,933	2.2	2.6	93.2	2.0	100.0	1,238
Not determined	56.1	445	1.2	8.0	58.8	32.0	100.0	250
Not circumcised	16.5	376	11.8	9.6	75.4	3.2	100.0	62
Age								
15-19	23.2	119	(14.3)	(0.0)	(76.1)	(9.7)	100.0	28
20-24	39.8	510	30.2	6.2	58.5	5.1	100.0	203
25-29	48.8	905	31.7	4.4	57.9	6.1	100.0	441
30-34	61.5	826	42.2	3.2	50.6	4.0	100.0	508
35-39	70.1	902	37.9	7.6	51.5	3.0	100.0	632
40-44	77.1	711	44.1	5.8	46.8	3.4	100.0	548
45-49	82.3	631	35.8	7.3	52.1	4.8	100.0	519
Residence								
Total urban	58.5	1,727	21.1	8.6	63.3	7.1	100.0	1,011
Asmara	50.7	761	3.4	13.8	69.3	13.5	100.0	386
Other towns	64.6	966	32.0	5.3	59.6	3.1	100.0	625
Rural	64.9	2,877	46.8	4.2	46.3	2.7	100.0	1,868
Zoba								
Debubawi Keih Bahri	78.2	162	66.3	1.1	32.0	0.7	100.0	126
Maekel	54.1	956	2.7	14.0	69.4	13.8	100.0	517
Semenawi Keih Bahri	71.8	643	66.0	4.3	28.9	0.8	100.0	462
Anseba	76.6	645	58.8	3.8	36.5	0.9	100.0	494
Gash-Barka	61.8	837	58.4	3.9	36.2	1.5	100.0	517
Debub	56.0	1,361	12.1	4.3	79.2	4.4	100.0	763
Education level								
No education	67.5	2,989	49.0	5.1	43.0	2.9	100.0	2,018
Primary	62.5	827	14.6	6.9	72.4	6.1	100.0	517
Middle	50.3	280	7.2	4.3	78.9	9.6	100.0	141
Secondary +	40.0	508	6.4	10.8	74.1	8.8	100.0	203
Wealth index								
Lowest	71.0	917	67.4	2.9	28.8	0.9	100.0	652
Second	65.4	943	51.1	4.2	42.0	2.7	100.0	617
Middle	60.1	920	35.3	4.4	57.5	2.7	100.0	553
Fourth	62.0	949	16.3	8.7	68.1	6.9	100.0	588
Highest	53.6	875	8.9	9.6	72.1	9.4	100.0	469
Total	62.5	4,604	37.8	5.8	52.2	4.2	100.0	2,879

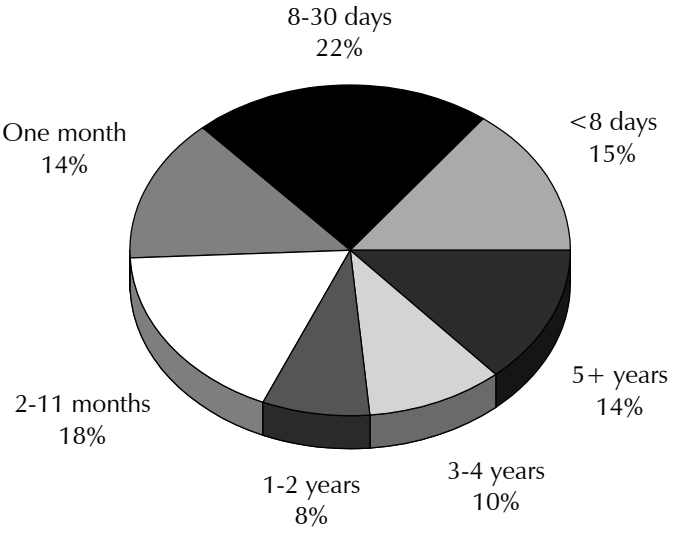
Note: Figures in parentheses are based on 25-49 cases.

Among circumcised daughters for whom information was collected, 38 percent had their vaginal area sewn, and 52 percent had their genitals nicked with no flesh removed. However, for mothers under age 30, the prevalence of the most severe type of circumcision among daughters is lower than the prevalence among their own cohorts. For each background variable, the percentage of mothers who had at least one daughter circumcised is lower than the percentage of respondents circumcised. One reason for the lower prevalence of circumcision among daughters than among respondents is that some women—especially young mothers—may have daughters who are too young to be circumcised. It is discouraging to note that 17 percent of mothers, who have themselves not undergone circumcision, have at least one daughter circumcised. Overall, the pattern of circumcision for the most recently circumcised daughters is almost the same as that of circumcised respondents. Mother's education influences both the likelihood of a daughter being circumcised and the severity of the operation. For example, 68 percent of the daughters of uneducated mothers have been circumcised, compared with 40 percent of daughters whose mothers have at least some secondary education. The likelihood of circumcised daughters having the severest form of circumcision varies between 6 and 15 percent when mothers have some schooling, compared with almost 50 percent when mothers have not attended school.

Age at Circumcision for Daughters

Two-thirds of daughters were reported by their mothers to have been circumcised in infancy. Thirty-seven percent of daughters were reported by their mothers to have been circumcised during the first 30 days of life and 14 percent were circumcised when they were one month old (Figure 12.2). One-fourth were circumcised when the daughters were at least three years old. A comparison of age at circumcision for all respondents and the most recently circumcised daughters indicates that there is a tendency to circumcise daughters at younger ages.

Figure 12.2
Daughter's Age at Circumcision



EDHS 2002

Persons Who Performed Daughter's Circumcision

Table 12.5 shows that female circumcision is performed the same way now as in 1995. Circumcision practitioners performed more than 80 percent of the daughters' circumcisions as they did

Table 12.5 Person who performed daughter's circumcision

Percent distribution of most recently circumcised daughters by person who performed the circumcision, according to daughter's type of circumcision and mother's background characteristics, Eritrea 2002

Background characteristic	Person who performed circumcision					Missing/ don't know	Total	Number of most recently circumcised daughters
	Doctor	Trained nurse/ midwife	TBA	Circum-cision practitioner	Other			
Daughter's type of circumcision								
Sewn closed	0.1	0.9	15.0	79.1	4.6	0.3	100.0	1,087
Flesh removed	0.0	1.3	15.2	77.5	5.9	0.0	100.0	166
Nicked, no flesh removed	0.6	0.6	7.9	87.7	3.1	0.0	100.0	1,504
Not determined	0.0	1.8	2.2	91.2	4.0	0.8	100.0	122
Residence								
Total urban	1.0	1.6	10.0	86.0	1.4	0.1	100.0	1,011
Asmara	1.6	1.3	7.7	87.3	1.8	0.3	100.0	386
Other towns	0.6	1.7	11.5	85.1	1.1	0.1	100.0	625
Rural	0.0	0.4	11.2	83.0	5.3	0.1	100.0	1,868
Zoba								
Debubawi Keih Bahri	0.0	0.2	17.5	80.8	1.3	0.3	100.0	126
Maekel	1.2	1.2	8.4	87.4	1.6	0.2	100.0	517
Semenawi Keih Bahri	0.2	1.1	12.5	79.7	6.6	0.0	100.0	462
Anseba	0.0	1.9	13.2	83.7	1.2	0.0	100.0	494
Gash-Barka	0.5	0.2	7.8	88.9	2.2	0.4	100.0	517
Debub	0.0	0.1	10.8	81.8	7.2	0.1	100.0	763
Total	0.3	0.8	10.8	84.0	3.9	0.1	100.0	2,879

TBA = Traditional birth attendant

for the respondents themselves; traditional birth attendants performed only a small proportion (11 percent). TBAs performed somewhat higher proportions of circumcisions in zoba Debubawi Keih Bahri (18 percent).

12.3 OBJECTIONS TO DAUGHTER'S CIRCUMCISION

The 2002 EDHS results presented in Table 12.6 show that among women who have at least one daughter circumcised, 95 percent reported that no one objected to the most recent circumcision, indicating acceptance of the continuation of the practice of circumcision by respondents, their relatives, and friends. Mothers age 15-29 are more likely than older mothers to report that someone objected to the circumcision. The percentage of mothers reporting that someone objected to their daughter's circumcision is highest among mothers with some secondary education. One-third of these mothers reported that someone objected to their daughter being circumcised; one in four reported that their husband objected. Reports that some person objected to the daughter's circumcision were also high among mothers living in urban areas (11 percent), zoba Maekel (11 percent) and Asmara (14 percent), and in the highest quintile of the wealth index (17 percent). In almost all subgroups, fathers are more likely than mothers to object to their daughter's circumcision.

Table 12.6 Objections to daughter's circumcision

Among women who have at least one circumcised daughter, percentage reporting objections raised by specific persons to the last daughter's circumcision, by daughter's circumcision status and mother's background characteristics, Eritrea 2002

Background characteristic	Persons who raised objections								Number of women with circumcised daughter
	Any person	Respondent	Respondent's husband	Respondent's mother	Respondent's mother-in-law	Other relatives of respondent	Others	No one	
Daughter's circumcision									
Sewn closed	2.0	1.0	0.4	0.0	0.1	0.8	0.0	97.6	1,087
Flesh removed	5.0	2.0	2.7	0.0	0.0	2.1	0.0	93.6	166
Nicked, no flesh removed	6.2	1.3	4.6	0.2	0.1	0.5	0.2	93.8	1,504
Not determined	8.4	3.7	4.8	0.0	0.0	0.0	0.0	90.8	122
Mother's age									
15-19	8.9	0.0	8.9	0.0	0.0	0.0	0.0	91.1	28
20-24	9.1	2.7	4.5	0.8	0.5	1.6	1.0	90.4	203
25-29	8.5	3.0	5.2	0.0	0.0	1.1	0.0	91.5	441
30-34	4.6	1.4	2.6	0.0	0.0	1.0	0.0	94.8	508
35-39	4.8	0.7	4.0	0.2	0.0	0.2	0.1	95.0	632
40-44	3.3	1.0	1.4	0.0	0.2	1.1	0.0	96.4	548
45-49	0.6	0.1	0.5	0.0	0.0	0.0	0.0	99.2	519
Residence									
Total urban	10.5	3.1	7.2	0.1	0.2	1.4	0.1	89.3	1,011
Asmara	14.0	3.9	10.9	0.0	0.3	1.2	0.0	85.8	386
Other towns	8.4	2.5	4.9	0.1	0.2	1.5	0.2	91.4	625
Rural	1.4	0.3	0.6	0.1	0.0	0.3	0.1	98.2	1,868
Zoba									
Debubawi Keih Bahri	5.5	2.1	2.4	0.0	0.0	0.8	0.3	94.5	126
Maekel	10.7	3.1	8.4	0.0	0.2	0.9	0.0	89.1	517
Semenawi Keih Bahri	3.4	0.4	1.9	0.2	0.0	0.8	0.3	96.6	462
Anseba	2.7	1.4	1.3	0.0	0.2	0.6	0.0	97.2	494
Gash-Barka	0.7	0.0	0.1	0.0	0.0	0.6	0.0	98.5	517
Debub	5.0	1.2	2.8	0.3	0.0	0.6	0.1	94.6	763
Mother's education									
No education	1.4	0.3	0.7	0.1	0.0	0.4	0.1	98.1	2,018
Primary	6.3	1.8	3.8	0.2	0.0	1.9	0.2	93.7	517
Middle	5.1	2.9	0.9	0.0	0.0	1.3	0.0	94.9	141
Secondary +	31.8	9.1	23.8	0.4	1.1	0.6	0.1	68.2	203
Wealth index									
Lowest	0.7	0.1	0.2	0.1	0.0	0.3	0.0	98.7	652
Second	0.6	0.0	0.3	0.0	0.0	0.3	0.0	99.3	617
Middle	2.5	0.4	1.1	0.2	0.0	0.5	0.2	97.2	553
Fourth	5.4	1.8	2.7	0.2	0.0	1.4	0.2	94.4	588
Highest	16.8	5.0	12.4	0.0	0.5	1.2	0.1	83.0	469
Total	4.6	1.3	2.9	0.1	0.1	0.7	0.1	95.1	2,879

12.4 ATTITUDES TOWARD FEMALE CIRCUMCISION

Women's Attitudes toward Female Circumcision

Table 12.7 shows the percent distribution of women who know about female circumcision by their attitudes toward female circumcision, according to background characteristics. Attitudes of Eritrean women toward circumcision are evenly divided; the proportion who want female circumcision to continue is the same as the proportion who want it discontinued (49 percent). As expected, women who are not circumcised are more likely to want the practice discontinued (86 percent) than women who have been circumcised (44 percent). However, one-fourth of women who have the most severe type of circumcision and more than half of those with less severe types of circumcision (56-57 percent) think that the practice of circumcision should be discontinued. Not surprisingly, support for continuing the practice is stronger among women who have at least one circumcised daughter (68 percent) than among women with daughters who are not circumcised (32 percent). The pattern of support for circumcision seen in the case of the daughter's circumcision is the same as the pattern for all women, except that support for continuation of the practice is higher for each type of circumcision in the case of daughters.

Seventy-two percent of women in Asmara, 57 percent of women in other urban areas, and 37 percent of women in rural areas believe that female circumcision should be discontinued. Attitudes toward circumcision vary widely by zoba; between 26 percent and 69 percent of women oppose the practice. In zobas Maekel and Debub, the majority of women favor discontinuing the practice. Support for the practice is negatively related to the wealth index. The higher the wealth index, the lower the support is for the continuation of female circumcision.

Greater support for discontinuation of circumcision among younger women suggests that the practice is likely to continue declining in the future. However, the change is likely to be much slower in rural areas and in zobas where the most severe form of circumcision is prevalent.

Although the 2002 EDHS asked the attitudinal questions on circumcision only to women who reported knowing about female circumcision, while the 1995 EDHS asked these questions to all respondents, the results can still be considered comparable because 99 percent of respondents in the 2002 survey reported knowing about circumcision. It is encouraging to note that women's attitudes toward circumcision have changed substantially since 1995. The proportion of women who support discontinuing the practice has increased from 38 percent to 49 percent. The change in attitudes has occurred in all sub-groups shown in Table 12.7, and more rapidly in some subgroups, especially those which in the past had the strongest support for continuation. Support for discontinuation of female circumcision increased from 28 percent to 37 percent among rural women, and from 15 percent to 26 percent among women in zoba Gash-Barka. Nonetheless, the changes in attitude do not imply that a similar change in practice will follow soon, because the practice of female circumcision in Eritrea has its roots deep in tradition.

Table 12.7 Attitudes toward female circumcision by background characteristics

Percent distribution of women who have heard of female circumcision by attitude toward female circumcision, according to background characteristics, Eritrea 2002

Background characteristic	Thinks female circumcision should be:					Number of women who have heard of female circumcision
	Continued	Dis-continued	Depends	Missing/ don't know	Total	
Respondent's circumcision						
Not circumcised	10.7	86.1	0.8	2.4	100.0	920
Circumcised	53.3	44.2	1.7	0.8	100.0	7,765
Sewn closed	73.6	24.2	1.5	0.7	100.0	2,997
Flesh removed	40.0	57.0	1.7	1.4	100.0	318
Nicked, no flesh removed	42.5	55.5	1.5	0.5	100.0	3,572
Not determined	32.4	62.5	2.9	2.3	100.0	879
Daughter's circumcision						
No daughter	42.4	55.3	1.2	1.2	100.0	4,081
Daughter not circumcised	32.0	65.9	1.0	1.0	100.0	1,725
Daughter circumcised	67.8	29.0	2.5	0.7	100.0	2,879
Sewn closed	81.1	16.2	2.0	0.7	100.0	1,087
Flesh removed	55.0	43.3	1.6	0.0	100.0	166
Nicked, no flesh removed	61.4	35.3	2.6	0.7	100.0	1,504
Not determined	47.1	45.6	6.0	1.3	100.0	122
Age						
15-19	36.9	60.6	1.1	1.4	100.0	1,958
20-24	44.8	53.3	1.1	0.9	100.0	1,443
25-29	46.2	51.8	1.0	1.0	100.0	1,536
30-34	54.1	43.7	1.3	0.9	100.0	1,107
35-39	55.0	42.0	2.2	0.8	100.0	1,081
40-44	60.3	38.0	1.3	0.4	100.0	827
45-49	63.4	30.5	4.8	1.3	100.0	732
Residence						
Total urban	33.6	64.1	1.6	0.7	100.0	3,738
Asmara	25.6	71.5	1.8	1.1	100.0	1,880
Other towns	41.7	56.6	1.5	0.2	100.0	1,858
Rural	60.2	37.0	1.6	1.2	100.0	4,946
Zoba						
Debubawi Keih Bahri	57.6	37.3	3.5	1.6	100.0	323
Maekel	27.9	69.3	1.8	1.0	100.0	2,239
Semenawi Keih Bahri	67.9	29.5	1.9	0.7	100.0	1,147
Anseba	56.4	42.3	1.2	0.2	100.0	1,129
Gash-Barka	72.5	25.6	1.0	0.9	100.0	1,492
Debub	39.4	57.6	1.6	1.4	100.0	2,354
Education						
No education	66.5	30.5	1.9	1.1	100.0	4,361
Primary	45.8	51.4	1.9	0.8	100.0	1,617
Middle	30.5	68.0	0.6	0.9	100.0	962
Secondary +	17.3	80.8	1.1	0.8	100.0	1,745
Wealth index						
Lowest	71.4	26.9	0.8	0.9	100.0	1,465
Second	62.5	34.4	2.2	0.9	100.0	1,607
Middle	55.9	40.6	1.6	1.8	100.0	1,659
Fourth	37.0	61.4	1.0	0.6	100.0	1,821
Highest	27.4	69.8	2.1	0.7	100.0	2,133
Total	48.8	48.7	1.6	1.0	100.0	8,685

12.5 WOMEN'S PERCEPTIONS OF THEIR HUSBAND'S ATTITUDE TOWARD FEMALE CIRCUMCISION

Table 12.8 shows women's perceptions of their husband's attitude toward circumcision. The table indicates that 43 percent of women believe that their husband supports continuation of the practice of circumcision, while 35 percent feel that their husband supports discontinuation. Twenty-two percent of women do not know their husband's attitude, which may mean that many couples either do not consider circumcision an important issue to discuss or they are embarrassed to discuss it. Even among currently married women who have at least one circumcised daughter, almost one in five does not know her husband's attitude toward circumcision.

The majority of women believe that their husband shares their attitude toward circumcision. Two-thirds of women who think that female circumcision should be continued, and two-thirds of those who think that the practice should be discontinued, believe that their husband holds the same attitude on the subject. The proportion of women who do not know their husband's attitude is the same for both groups.

By residence, half of rural women think that their husband supports continuation of the practice, compared with only 29 percent of urban women.

12.6 PERCEIVED BENEFITS OF FEMALE CIRCUMCISION

Table 12.9 shows the responses of women who have heard of female circumcision to the question about the benefits of a girl being circumcised. Among women who have heard of female circumcision, three in ten report that there are no benefits from circumcision. The subgroups in which at least half of women report no benefits from circumcision are women who are not circumcised, women living in Asmara, and women with at least some secondary education. Additionally, 40 percent of younger women (age 15-19) and women with some middle-level education, and almost half of women living in zoba Maekel and women in the highest quintile of the wealth index, mentioned that there are no benefits from female circumcision.

For many Eritrean women circumcision is an important factor in attaining social acceptance and having better marriage prospects. Social acceptance (42 percent) is the most frequently cited benefit of circumcision, followed by better marriage prospects (25 percent), and religious approval (18 percent) (Figure 12.3). Although the subgroups shown in Table 12.9 vary markedly in terms of whether they perceive any benefits from circumcision, these three benefits (in that order) are cited most often by almost all subgroups. Religious approval as a benefit of circumcision was mentioned by one-third of women who had the most severe form of circumcision and 24-30 percent of women in zobas Debubawi Keih Bahri, Gash-Barka, Semenawi Keih Bahri, and Anseba and women in the two lowest quintiles of the wealth index. Among these women, social acceptance is the most frequently mentioned benefit of circumcision followed by religious approval and better marriage prospects.

Personal cleanliness or hygiene (13 percent) and the view that female circumcision preserves virginity and prevents premarital sex (4 percent) are mentioned less frequently as benefits of circumcision. However, one-fourth of women who had some flesh removed from their genitals during circumcision and women in zoba Debubawi Keih Bahri, and one-fifth of women in zoba Semenawi Keih Bahri, mentioned personal cleanliness or hygiene as one of the benefits of the practice.

Table 12.8 Women's perception of their husband's attitude toward circumcision

Percent distribution of currently married women by their perception of their husband's attitude toward female circumcision, according to background characteristics, Eritrea 2002

Background characteristic	Wife believes husband thinks circumcision should be:			Total	Number of currently married women
	Continued	Discontinued	Missing/ Don't know		
Age					
15-19	34.6	30.6	34.8	100.0	576
20-24	38.2	34.2	27.6	100.0	945
25-29	39.1	41.8	19.1	100.0	1,206
30-34	48.6	32.5	18.9	100.0	902
35-39	43.3	38.0	18.7	100.0	897
40-44	51.4	30.9	17.7	100.0	663
45-49	54.0	26.4	19.6	100.0	526
Residence					
Urban	29.2	53.2	17.6	100.0	1,965
Asmara	19.1	64.7	16.2	100.0	867
Other towns	37.2	44.1	18.8	100.0	1,099
Rural	50.9	25.0	24.1	100.0	3,749
Zoba					
Debubawi Keih Bahri	39.8	26.8	33.4	100.0	210
Maekel	22.0	61.8	16.2	100.0	1,100
Semenawi Keih Bahri	59.6	20.5	19.9	100.0	817
Anseba	56.4	23.8	19.7	100.0	784
Gash-Barka	67.5	14.2	18.3	100.0	1,135
Debub	27.6	43.8	28.6	100.0	1,669
Education					
No education	54.4	22.2	23.4	100.0	3,538
Primary	32.8	42.9	24.3	100.0	1,068
Middle	27.5	49.9	22.7	100.0	400
Secondary +	13.7	76.1	10.2	100.0	708
Husband's education					
No education	60.4	17.6	22.0	100.0	2,808
Primary	35.3	40.8	23.9	100.0	1,207
Middle	26.2	49.4	24.4	100.0	527
Secondary +	19.0	63.5	17.5	100.0	1,129
Wife's attitude toward circumcision					
Continued	68.6	10.7	20.6	100.0	3,105
Discontinued	13.0	65.9	21.1	100.0	2,460
Depends	28.2	21.0	50.7	100.0	97
Daughter's circumcision status					
No daughter	37.4	31.9	30.7	100.0	1,760
Daughter not circumcised	28.1	54.9	17.0	100.0	1,503
Daughter circumcised	57.2	24.2	18.6	100.0	2,452
Sewn closed	73.3	11.9	14.8	100.0	990
Flesh removed	50.0	40.8	9.2	100.0	136
Nicked, no flesh removed	46.6	30.8	22.6	100.0	1,231
Not determined	37.6	43.4	18.9	100.0	96
Total	43.4	34.7	21.9	100.0	5,714

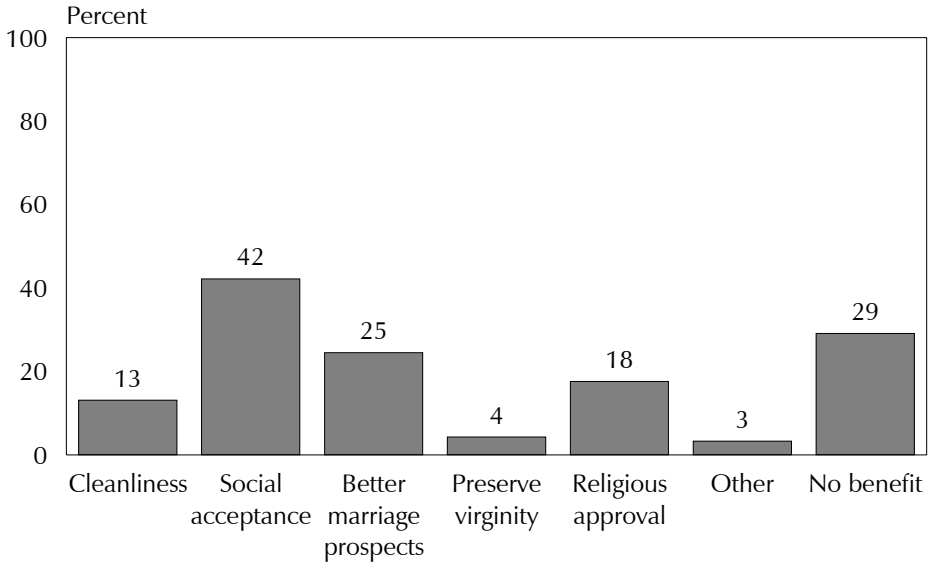
Note: Total includes 44 women with missing information on husband's education, and 52 women with missing information on their attitude toward circumcision, who are not shown separately.

Table 12.9 Perceived benefits of female circumcision

Percentage of women who have heard of female circumcision and who report specific benefits of female circumcision for a girl, by background characteristics, Eritrea 2002

Background characteristic	Perceived benefits of female circumcision							Number of women who have heard of female circumcision
	No benefit	Cleanliness/ hygiene	Social acceptance	Better marriage prospects	Preserves virginity/ prevents premarital sex	Religious approval	Other	
Type of circumcision								
Not circumcised	62.8	3.1	15.9	13.6	2.8	4.8	4.9	920
Circumcised	25.1	14.3	45.3	25.8	4.5	19.2	3.1	7,765
Sewn closed	12.5	17.2	59.7	23.1	5.3	32.2	0.9	2,997
Flesh removed	37.7	23.9	26.0	20.6	5.2	21.8	1.7	318
Nicked, no flesh removed	29.7	12.2	39.3	30.1	3.9	10.6	4.9	3,572
Not determined	45.1	9.2	27.8	19.3	4.0	8.8	3.8	879
Age								
15-19	40.0	7.9	34.4	19.5	2.8	13.0	4.1	1,958
20-24	32.4	11.7	38.9	23.0	3.7	16.8	3.7	1,443
25-29	30.7	13.6	41.6	24.8	4.7	18.2	2.8	1,536
30-34	25.3	15.2	44.5	25.7	3.8	21.1	2.3	1,107
35-39	23.0	17.2	46.9	27.5	4.8	19.1	2.5	1,081
40-44	20.3	15.5	49.6	26.5	7.4	20.4	2.8	827
45-49	14.8	17.2	52.1	31.6	4.9	19.9	4.6	732
Residence								
Total urban	40.5	11.6	32.5	22.4	3.5	12.0	3.6	3,738
Asmara	50.1	9.1	20.5	20.0	4.4	9.2	4.2	1,880
Other towns	30.8	14.2	44.6	24.8	2.6	14.8	2.9	1,858
Rural	20.5	14.2	49.6	26.1	4.9	21.9	3.1	4,946
Zoba								
Debubawi Keih Bahri	23.9	25.0	50.8	19.1	2.5	25.1	2.6	323
Maekel	48.7	9.6	21.3	20.9	4.2	9.4	4.1	2,239
Semenawi Keih Bahri	14.8	21.1	51.5	26.5	4.0	26.5	1.1	1,147
Anseba	18.2	7.0	62.9	23.9	5.6	30.3	0.9	1,129
Gash-Barka	15.0	15.2	58.2	22.6	4.4	24.3	5.3	1,492
Debub	32.4	12.6	36.3	29.1	4.1	9.9	3.6	2,354
Education								
No education	16.3	16.2	53.1	27.2	5.2	24.2	2.9	4,361
Primary	28.4	14.0	40.9	27.5	3.9	14.1	4.4	1,617
Middle	40.8	8.4	32.6	21.4	3.9	11.9	3.2	962
Secondary +	55.4	7.3	21.4	16.7	2.7	7.6	3.4	1,745
Wealth index								
Lowest	13.7	15.0	57.3	25.0	6.5	27.8	1.6	1,465
Second	18.1	15.0	52.2	26.2	4.7	23.8	3.6	1,607
Middle	23.4	13.7	47.1	25.4	4.0	18.3	3.8	1,659
Fourth	36.1	13.6	34.2	25.9	3.3	12.5	3.0	1,821
Highest	46.5	9.5	27.3	20.9	3.6	9.9	4.1	2,133
Total	29.1	13.1	42.2	24.5	4.3	17.6	3.3	8,685

Figure 12.3
Perceived Benefits of Female Circumcision



EDHS 2002

12.7 PERCEIVED BENEFITS OF GIRLS NOT BEING CIRCUMCISED

Table 12.10 shows the responses of women who have heard of female circumcision to the question about the benefits of a girl not being circumcised.

Forty-three percent of women report that there would be no benefit to a girl not being circumcised. More than half of women age 40-49, rural women, uneducated women, women in zobas Semenawi Keih Bahri and Anseba, and women in the lowest quintile of the wealth index say that there are no benefits to a girl not being circumcised.

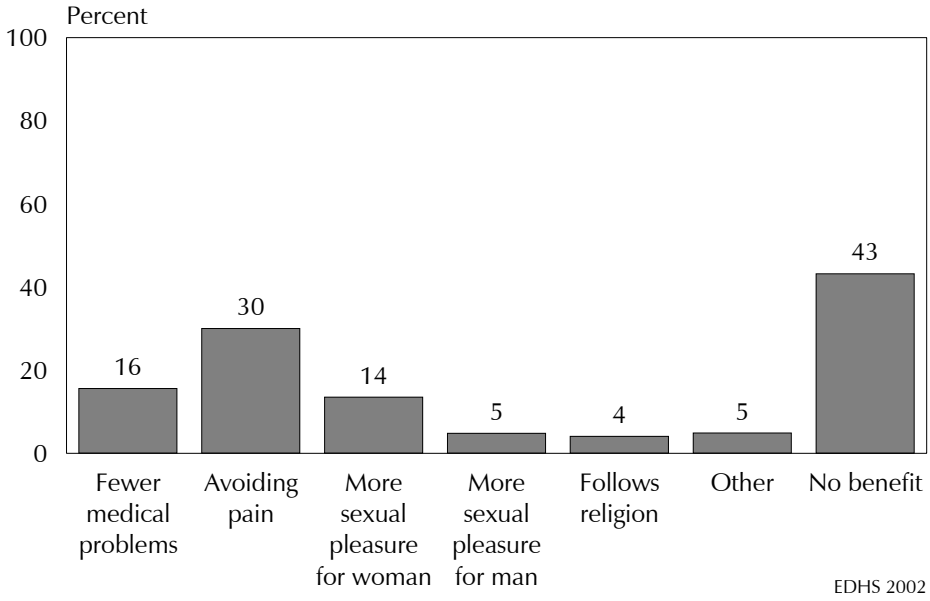
Among those who perceive benefits to not being circumcised, avoiding pain (30 percent), having fewer medical problems (16 percent), and more sexual pleasure for the woman (14 percent) are the most frequently cited benefits (Figure 12.4). Less than 5 percent reported that an uncircumcised girl would give more pleasure to her husband than a circumcised girl, and the same proportion said that an uncircumcised girl would be following religion. Avoiding pain is the most frequently cited benefit among all subgroups; more than four in ten uncircumcised women (45 percent) cited this benefit. The proportion mentioning "fewer medical problems" as a benefit to not being circumcised increases steadily from 8 percent of women in the lowest wealth quintile to 22 percent in the highest wealth quintile. A similar pattern is observed by women's education. The more education a woman has, the more likely she is to believe that girls have fewer medical problems if they are not circumcised. Urban women—especially those in Asmara—are more likely than rural women to cite more sexual pleasure for the girl as a benefit of not being circumcised.

Table 12.10 Perceived benefits of not undergoing female circumcision

Percentage of women who have heard of female circumcision and who report specific benefits of a girl not being circumcised, by background characteristics, Eritrea 2002

Background characteristic	Perceived benefits of not undergoing female circumcision							Number of women who have heard of female circumcision
	No benefits	Fewer medical problems	Avoiding pain	More sexual pleasure for her	More sexual pleasure for men	Follows religion	Other	
Type of circumcision								
Not circumcised	30.2	22.9	44.7	12.9	2.7	1.3	5.4	920
Circumcised	44.8	14.7	28.3	13.6	5.1	4.4	4.9	7,765
sewn closed	51.3	10.6	25.3	7.7	4.1	8.5	3.8	2,997
Flesh removed	32.9	23.4	26.9	20.6	9.5	5.0	8.7	318
Nicked, no flesh removed	41.4	18.0	30.1	17.8	5.1	1.9	4.9	3,572
Not determined	40.5	12.3	31.3	14.1	6.5	0.7	6.7	879
Age								
15-19	38.8	19.3	35.4	11.2	3.6	3.4	6.2	1,958
20-24	39.2	17.7	33.2	13.5	4.9	4.1	4.9	1,443
25-29	41.7	16.1	33.2	13.7	4.9	4.9	4.3	1,536
30-34	45.5	12.6	27.4	15.6	6.2	3.7	3.0	1,107
35-39	44.2	13.8	26.9	17.5	4.7	3.9	5.6	1,081
40-44	50.3	12.5	22.0	13.4	6.0	5.1	4.6	827
45-49	53.4	11.2	20.1	10.6	4.8	4.1	5.1	732
Residence								
Total urban	34.7	20.9	35.1	18.3	5.6	2.5	5.1	3,738
Asmara	31.3	20.2	32.8	22.9	7.2	2.2	7.1	1,880
Other towns	38.1	21.7	37.4	13.6	4.0	2.8	3.1	1,858
Rural	49.7	11.6	26.2	9.9	4.2	5.3	4.7	4,946
Zoba								
Debubawi Keih Bahri	41.0	16.2	27.3	7.9	1.2	9.5	12.0	323
Maekel	32.3	19.7	31.4	22.1	7.0	2.2	7.8	2,239
Semenawi Keih Bahri	57.4	13.7	28.5	7.1	1.1	2.5	0.8	1,147
Anseba	53.7	11.0	31.5	6.1	3.9	5.5	1.0	1,129
Gash-Barka	48.6	14.6	19.5	11.6	6.7	9.7	5.3	1,492
Debub	38.6	15.4	35.7	14.1	4.3	1.8	4.8	2,354
Education level								
No education	51.4	9.8	24.7	9.8	4.5	6.2	4.6	4,361
Primary	43.0	16.8	29.4	15.9	4.8	2.1	5.2	1,617
Middle	36.8	19.0	34.1	15.5	5.0	1.9	7.0	962
Secondary +	26.6	27.2	41.6	19.5	5.4	1.8	4.3	1,745
Wealth index								
Lowest	54.6	8.2	24.6	9.6	3.7	5.7	3.2	1,465
Second	49.0	10.4	25.6	9.1	4.8	8.1	4.2	1,607
Middle	48.7	15.9	25.4	9.2	4.3	3.5	5.5	1,659
Fourth	37.2	19.0	35.4	16.7	4.8	2.4	4.6	1,821
Highest	31.9	21.5	36.1	20.2	6.1	2.0	6.4	2,133
Total	43.2	15.6	30.0	13.5	4.8	4.1	4.9	8,685

Figure 12.4
Perceived Benefits of Not Undergoing Female Circumcision



12.8 BELIEFS ABOUT CIRCUMCISION

Female circumcision is practiced by all religious groups in Eritrea, including traditional believers, despite the fact that in recent years religious leaders of all faiths have either spoken against the practice or distanced themselves from showing support for the practice. Table 12.11 shows the percentage of women who agree with two statements about circumcision—that circumcision is required by religion and that circumcision prevents premarital sex. The results provide insight into the factors that contribute to the widespread support for female circumcision. Overall, 60 percent of women who have heard of female circumcision agree with the statement that circumcision is required by religion and 29 percent of women agree with the statement that female circumcision prevents premarital sex.

The differentials by background characteristics in the belief that circumcision is required by religion and that circumcision prevents premarital sex show the same pattern. Women's age has a positive relationship with both statements, while women's education and wealth have strong negative relationships with both statements. The differences by education are most marked. For example, 70 percent of women with no education believe that circumcision is required by religion, compared with 41 percent of women with at least some secondary education. The same pattern is seen for belief that female circumcision prevents premarital sex (38 percent and 13 percent, respectively). Women in urban areas, Asmara, and zoba Maekel, and women in the highest quintile of the wealth index are considerably less likely than other women to believe that circumcision is a religious requirement (47-51 percent) or that it prevents premarital sex (18-21 percent). In contrast, around seven in ten women age 45-49, women in the two lowest quintiles of the wealth index, and women in zobas Gash-Barka and Anseba believe that female circumcision is required by religion. Almost four in ten women age 40 and older and women in Gash-Barka believe that female circumcision prevents premarital sex.

Table 12.11 Beliefs about female circumcision

Percentage of women who have heard of female circumcision and who agree with two specific statements about circumcision, by background characteristics, Eritrea 2002

Background characteristic	Female circumcision is required by religion	Female circumcision prevents premarital sex	Number of women who have heard of female circumcision
Age			
15-19	53.4	20.1	1,958
20-24	60.4	23.6	1,443
25-29	59.0	28.8	1,536
30-34	62.8	31.3	1,107
35-39	62.4	32.1	1,081
40-44	63.7	38.7	827
45-49	68.6	38.6	732
Residence			
Total urban	51.3	20.6	3,738
Asmara	46.7	17.7	1,880
Other towns	56.1	23.5	1,858
Rural	66.8	34.5	4,946
Zoba			
Debubawi Keih Bahri	66.8	36.6	323
Maekel	47.9	19.3	2,239
Semenawi Keih Bahri	65.9	36.9	1,147
Anseba	68.1	26.8	1,129
Gash-Barka	70.0	37.6	1,492
Debub	58.1	27.0	2,354
Education			
No education	70.1	37.8	4,361
Primary	59.4	26.8	1,617
Middle	52.0	17.0	962
Secondary +	40.6	13.2	1,745
Wealth index			
Lowest	71.2	36.4	1,465
Second	69.1	37.5	1,607
Middle	62.3	31.6	1,659
Fourth	56.8	23.8	1,821
Highest	47.0	17.9	2,133
Total	60.1	28.5	8,685

12.9 PROBLEMS ASSOCIATED WITH FEMALE CIRCUMCISION

Long-term complications of female circumcision can cause suffering for many years. Hardening of the scar tissue (keloids) can cause problems during sexual intercourse or at the time of delivery. In order to ascertain the extent of complications, circumcised women who had ever had sex were asked whether they had had any health problems or other complications during sexual intercourse due to circumcision. Women who had had at least one birth were also asked whether they had had any problem at the time of delivery. Because the problems associated with circumcision were self-diagnosed, it is likely that some respondents did not report having problems because they did not recognize them as such

and regarded their experience as normal and natural for women. This is most likely among women in groups with higher rates of female circumcision.

Seven percent of circumcised women who had ever had sex reported having problems during sexual relations due to their circumcision (Table 12.12). Among circumcised women who had at least one birth, 11 percent reported having problems during delivery and 4 percent reported having problems both during sexual relations and delivery. These findings indicate a slight decrease from 1995 in the extent of the problems. For example, the proportion of women reporting problems during sexual relations declined from 12 percent in 1995 to 7 percent in 2002, and the proportion citing problems during delivery fell from 17 to 11 percent.

The type of circumcision has a direct link with the proportion of women who have problems

Table 12.12 Problems associated with female circumcision

Among circumcised women who have ever had sex, the percentage who had problems or complications during sexual relations as a result of being circumcised, and among circumcised women who had at least one birth, the percentage who had problems or complications during delivery as a result of being circumcised, by background characteristics, Eritrea 2002

Background characteristic	Circumcised women who have ever had sex: Had problem during sexual relations	Circumcised women who have ever had sex: Number of circumcised women who have ever had sex	Circumcised women who have given birth: Had problem during delivery	Circumcised women who have given birth: Had problem during sexual relations and delivery	Circumcised women who have given birth: Number of circumcised women who have given birth
Type of circumcision					
Sewn closed	14.6	2,556	21.7	9.4	2,158
Flesh removed	6.6	234	6.2	3.6	203
Nicked, no flesh removed	0.9	2,779	2.5	0.5	2,434
Not determined	2.3	647	4.3	1.0	561
Age					
15-19	11.0	524	18.6	8.6	167
20-24	9.7	967	13.1	6.1	722
25-29	6.9	1,264	11.5	4.2	1,144
30-34	5.3	1,002	9.5	3.2	942
35-39	5.0	989	9.3	3.2	950
40-44	6.1	774	9.7	4.3	754
45-49	5.7	695	8.5	4.3	677
Education					
No education	8.3	3,831	12.8	5.3	3,412
Primary	6.0	1,157	8.3	3.3	971
Middle	4.0	446	7.3	2.7	345
Secondary +	2.8	781	3.8	1.0	629
Wealth index					
Lowest	10.1	1,181	15.1	5.8	1,019
Second	8.1	1,287	14.3	5.0	1,093
Middle	8.6	1,291	10.4	5.3	1,093
Fourth	4.1	1,246	7.8	3.0	1,106
Highest	3.6	1,211	5.2	2.2	1,046
Total	6.9	6,216	10.5	4.3	5,357

during sexual relations and at delivery. Women who have had the most severe type of circumcision are much more likely to report experiencing problems during sexual relations (15 percent) and at delivery (22 percent) than women who have had the least severe form of circumcision (1 percent and 3 percent, respectively).

Younger women (under 25) are more likely than older women to report having problems during sexual relations because of circumcision. For example, 11 percent of women age 15-19 reported having problems during sexual relations, compared with 5 percent of women age 30-34.

Both level of education and wealth index quintile are negatively correlated with women reporting problems during sexual relations or delivery because of circumcision.

Women who had problems or complications during sexual relations and at delivery as a result of being circumcised were asked what they did to treat the problems. Results show that 84 percent of women who had sexual problems and 66 percent of women who had delivery problems associated with circumcision, did not seek any treatment (data not shown). This implies that either women suffer with the problems caused by circumcision rather than seek help or the problems are not sufficiently severe that the women seek help.

REFERENCES

Central Statistical Authority (CSA) [Ethiopia] and ORC Macro. 2001. *Ethiopia Demographic and Health Survey 2000.* Addis Ababa, Ethiopia and Calverton, Maryland, USA: Central Statistical Authority and ORC Macro.

Dewey, K. 2001. *Guiding principles for complementary feeding of the breastfed child.* Washington, D.C.: Pan American Health Organization and World Health Organization.

El-Zanaty, F. and A. Way. 2001. *Egypt Demographic and Health Survey 2000*. Calverton, Maryland, USA: Ministry of Health and Population [Egypt], National Population Council, and ORC Macro.

Family Care International (FCI). 1998. *The safe motherhood action agenda: Priorities for the next decade.* New York: Family Care International.

Family Reproductive Health Association of Eritrea (FRHAE). 2000. *Sedrabet*. Vol. 1. Asmara, Eritrea: FRHAE.

Gwatkin, D.R., S. Rutstein, K. Johnson, R.P. Pande, and A. Wagstaff. 2000. *Socio-economic differences in health, nutrition and poverty.* HNP/Poverty Thematic Group of The World Bank. Washington, D.C.: The World Bank.

Krasovec, K. and M. Anderson, eds. 1991. *Maternal nutrition and pregnancy outcomes: Anthropometric assessment.* PAHO Scientific Publication No. 250. Washington, D.C.: Pan American Health Organization.

Ministry of Health (MOH) [Eritrea]. 1998. *Primary health care policy and policy guidelines*. Asmara, Eritrea: Ministry of Health.

Ministry of Health (MOH) [Eritrea]. 2000. *Annual health service activity report 2000.* Asmara, Eritrea: Ministry of Health.

Ministry of Health (MOH) [Eritrea]. 2001a. *Annual report on HIV/AIDS.* Asmara, Eritrea: Ministry of Health.

Ministry of Health (MOH) [Eritrea]. 2001b. *HIV/AIDS Risk Groups and Risk Behaviors Identification Survey.* Asmara, Eritrea: Ministry of Health.

Ministry of Health (MOH) [Eritrea]. 2002. *National protocol on safe motherhood.* Asmara, Eritrea: Ministry of Health.

Ministry of Health (MOH) [Eritrea] and Centers for Disease Control and Prevention (CDC). 2002. *Malaria Update Newsletter.* Vol. 1 Asmara, Eritrea: Ministry of Health and Centers for Disease Control and Prevention.

Ministry of Land, Water and Environment [Eritrea]. 1997. *Environmental Information Systems Project.* Asmara, Eritrea: Ministry of Land, Water and Environment.

Ministry of Local Government [Eritrea]. 2002. *Population estimation of Eritrea, 2001*. Cartography Unit. Asmara, Eritrea: Ministry of Local Government.

National Population Commission (NPC) [Nigeria]. 2000. *Nigeria Demographic and Health Survey 1999.* Calverton, Maryland: National Population Commission and ORC Macro.

National Statistical Office (NSO) [Malawi] and ORC Macro. 2001. *Malawi Demographic and Health Survey 2000.* Zomba, Malawi and Calverton, Maryland, USA: National Statistical Office and ORC Macro.

National Statistics Office (NSO) [Eritrea] and Macro International Inc. 1997. *Eritrea Demographic and Health Survey 1995.* Calverton, Maryland, USA: National Statistics Office and Macro International Inc.

Rutstein, S. 1999. Wealth versus expenditure: Comparison between the DHS wealth index and household expenditures in four departments of Guatemala. Calverton, Maryland, USA: ORC Macro (Unpublished).

Rutstein, S., K. Johnson, and D. Gwatkin. 2000. Poverty, health inequality, and its health and demographic effects. Paper presented at the 2000 Annual Meeting of the Population Association of America, Los Angeles, California.

Sachs, J. 1999. Helping the poorest. *The Economist* August 14-20, pp. 27-30.

Statistics Department, Ministry of Finance and Economic Planning [Uganda] and Macro International Inc. 1996. *Uganda Demographic and Health Survey, 1995.* Calverton, Maryland, USA: Statistics Department, Ministry of Finance and Economic Planning and Macro International Inc.

Uganda Bureau of Statistics (UBOS) and ORC Macro. 2001. *Uganda Demographic and Health Survey 2000-2001.* Calverton, Maryland, USA: Uganda Bureau of Statistics and ORC Macro.

UNAIDS. 2002. *Report on the global HIV/AIDS epidemic.* Geneva, Switzerland: UNAIDS.

United Nations Development Program (UNDP). 2001. *Human development index.* New York: Oxford University Press.

University of Asmara. 2000. *From border dispute to open invasion: A report on Ethiopia's aggression against Eritrea and its consequences.* Asmara, Eritrea: University of Asmara.

World Food Programme (WFP). 2002. *Nutrition mission report.* Asmara, Eritrea: World Food Programme.

World Health Organization (WHO). 1996. *Female genital mutilation: A report of a WHO technical working group, Geneva, 17-19 July 1995.* Geneva: World Health Organization.

World Health Organization (WHO). 2002a. *Primary health care review, 1995-2000.* Asmara, Eritrea: World Health Organization.

World Health Organization (WHO). 2002b. *Roll back malaria*. Geneva: World Health Organization.

World Health Organization (WHO) and UNICEF. 1998. *Complementary feeding of young children in developing countries: A review of current scientific knowledge.* Geneva: World Health Organization.

World Health Organization (WHO) and UNICEF. 2003. *The Africa malaria report 2003.* Geneva: World Health Organization.

SAMPLE DESIGN

APPENDIX A

A.1 INTRODUCTION

The 2002 Demographic and Health Survey in Eritrea was expected to provide a minimum of 7,500 completed interviews of women age 15-49 years, after taking into account a similar level of non-response found in the 1995 EDHS. Actually, the sample yielded 8,754 completed cases. The sample design provides reliable estimates of indicators for the entire country, for urban and rural areas, and for each of the six zobas in Eritrea.

A.2 SAMPLE FRAME

Administratively, Eritrea is divided into six zobas, and each zoba is divided into subzobas. For each subzoba, the sample design is based on a list of all towns in urban areas and all villages in rural areas. Because no census material or recent sampling frame was available, the 2000 list of residential units with basic statistical information, compiled by the Ministry of Local Government, was used as the frame for the 2002 EDHS sample design.

A.3 STRATIFICATION

In the frame, the lists of towns and villages were stratified separately by urban and rural areas within each subzoba and zoba. For practical purposes, the village is a convenient unit for a new household listing. However, since towns have large variations in population size, they are not very convenient for a complete household listing process. Large towns required a further subsampling of smaller units (blocks) and/or an additional segmentation process.

A.4 SAMPLE ALLOCATION

The primary sampling unit (PSU)—cluster—for the 2002 EDHS was defined on the basis of Standard Segment Areas (SSA). Since each SSA has about 200 households, a minimum requirement of 200 households per cluster size was imposed in the design. The number of clusters in each of the six zobas was not allocated proportionally to their total population because of the need to present estimates for each zoba. In Eritrea, about three-fourths of the population reside in rural areas. Table A.1 shows the proportional and square root allocations of the 368 clusters.

The target for the 2002 EDHS sample was to obtain a minimum of about 7,500 completed interviews. Based on the level of nonresponse found in the 1995 EDHS, to achieve this target, approximately 9,800 households were selected, and all women age 15-49 were to be interviewed. The target was to reach a minimum of 1,000 completed interviews per zoba. In each zoba the number of households was distributed proportionately between urban and rural areas. Table A.2 shows the distribution of households by zoba.

Table A.1 Proportional and square root allocations of clusters

Proportional and square root allocations of 368 clusters, by zoba, Eritrea 2002

Zoba	Percentage of households 2000	Sample of 368 clusters		
		Proportional allocation	Square root allocation	Adjusted
Debubawi Keih Bahri	2.97	11	28	41
Semenawi Keih Bahri	18.12	67	68	60
Anseba	15.68	58	64	59
Gash-Barka	24.50	90	79	71
Debub	33.67	123	93	79
Maekel	5.07	19	36	58
Total	100.00	368	368	368

Table A.2 Expected number of selected households to reach the target of completed interviews

Expected number of selected households to reach the target of completed interviews, by zoba, Eritrea 2002

Zoba	Expected number of completed interviews, 2002 EDHS	Completed interviews, 1995 EDHS	Selected households, 1995 EDHS	Expected house-holds selected, 2002 EDHS
Debubawi Keih Bahri	1,000	273	447	1,637
Semenawi Keih Bahri	1,000	803	1,213	1,511
Anseba	1,100	559	743	1,462
Gash-Barka	1,300	834	1,146	1,786
Debub	1,550	852	1,081	1,967
Maekel	1,550	1,733	1,628	1,456
Total	7,500	5,054	6,258	9,819

The selected households were distributed in 368 clusters (119 clusters in the urban areas and 249 clusters in the rural areas). Table A.3 and the map on page 221 show the distribution of clusters selected for the 2002 EDHS.

Table A.3 Final allocation of women 15-49 with completed interviews and clusters in each zoba

Final allocation of women 15-49 with completed interviews and clusters in each zoba, by urban and rural areas, Eritrea 2002

Zoba	Expected number of completed interviews	Number of clusters		
		Rural	Urban	Total
Debubawi Keih Bahri	1,000	23	18	41
Semenawi Keih Bahri	1,000	41	19	60
Anseba	1,100	45	14	59
Gash-Barka	1,300	60	11	71
Debub	1,550	67	12	79
Maekel	1,550	13	45	58
Total	7,500	249	119	368

Sampling Points for the 2002 Eritrea Demographic and Health Survey

Note: This is not the official and political map of Eritrea.

Under this final allocation, estimates could also be produced for Asmara city since there were 43 selected clusters in Asmara.

A.5 SAMPLE SELECTION

The 2002 EDHS sample was selected using a stratified two-stage cluster design. In every zoba except zoba Debubawi Keih Bahri, the calculated average sample take was 25 households. In zoba Debubawi Keih Bahri, the calculated average sample take was about 40 households. All women age 15-49 years in the selected households were eligible for the individual interview. Once the number of households was allocated to each zoba, clusters were selected using the following procedure. Lists of towns and villages in each zoba were ordered by urban and rural residence. All rural units were ordered at the top of the list and then all urban units were ordered at the bottom of the list. The selected clusters were identified using a systematic selection with sampling interval $I=[\{\Sigma\ M_i\}]/a$, (see symbol definition below), which is equivalent to a systematic selection of PSUs with probability proportional to the number of households in each unit. The selection was done using the following formula:

$$P_{1i} = (a * M_i) / (\Sigma M_i)$$

where,

a: is the number of clusters to be selected in the given zoba,

M_i: is the number of households in the i^{th} PSU reported in the 2000 sample frame,

ΣM_i: is the number of households in the zoba according to the 2000 sample frame.

In the selected PSUs that contained two or more standard segments, a segmentation process was recommended to choose only one segment part with probability proportional to size (i.e., P_{2i}, meaning the probability of selecting a segment within a PSU). A complete household listing process was implemented in the selected segment. In all other selected PSUs, a complete household listing operation was carried out and households were selected to achieve a self-weighted sampling fraction in each zoba. However, since the 2002 EDHS sample is unbalanced among zobas, a final weighting adjustment was required to provide estimates in every other domain.

In a given zoba, if the overall sampling fraction (f) has been calculated, and if c_i is the number of households selected in the i^{th} cluster out of the total number of households (L_i), found in the 2002 listing process, then the self-weighting condition can be expressed as:

$$f = P_{1i} * P_{2i} * (c_i / L_i)$$

The final number of households in the i^{th} cluster is calculated as:

$$c_i = (f * L_i) / (P_{1i} * P_{2i})$$

and the household selection interval for the i^{th} cluster is given as:

$$I_i = L_i / c_i$$

$$I_i = (P_{1i} * P_{2i}) / f$$

A.6 SAMPLE IMPLEMENTATION

The results of the sample implementation for the households and the individual interviews are shown in Table A.4. In all, 9,824 households were selected for interviewing. The 2002 EDHS fieldwork teams successfully completed interviews in 9,389 households. The main reasons that selected potential households were not interviewed were that the dwellings where the selected households were living were destroyed or households were away for an extended time period (3 percent of selected households could not be interviewed for these reasons). A total of 9,512 households were occupied, of which 9,389 were successfully interviewed. Overall, the household response rate was 98.7 percent. The household response rate was similar in urban and rural areas and in the six zobas (between 98.1 and 99.7 percent).

In the interviewed households, 9,096 eligible women were identified, of whom 96.2 percent were interviewed. The individual women's response rate was similar in urban and rural areas and in the six zobas (between 93.0 percent and 97.8 percent).

Table A.4 Sample implementation

Percent distribution of households and eligible women by results of the household and individual interviews, and household, eligible women and overall response rates, according to urban-rural residence and zoba, Eritrea 2002

	Residence				Zoba						
Result	Total urban	Asmara	Other urban	Rural	Debubawi Keih Bahri	Maekel	Semenawi Keih Bahri	Anseba	Gash-Barka	Debub	Total
Selected households											
Completed (C)	96.4	95.1	97.0	95.2	92.5	94.7	98.4	99.6	93.8	95.2	95.6
HH present but no competent respondent at home (HP)	1.4	1.7	1.3	1.1	0.9	1.7	0.7	0.3	1.7	1.6	1.2
Refused (R)	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Dwelling not found (DNF)	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Household absent (HA)	1.5	2.0	1.2	3.1	6.1	2.3	0.5	0.1	3.6	2.5	2.6
Dwelling vacant/ address not a dwelling (DV)	0.5	0.9	0.3	0.4	0.2	0.9	0.1	0.0	0.6	0.7	0.4
Dwelling destroy (DD)	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.0	0.3	0.1	0.1
Other (O)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of sampled households	3,245	1,076	2,169	6,579	1,632	1,453	1,502	1,476	1,778	1,983	9,824
Household response rate (HRR)	98.4	98.1	98.6	98.8	98.8	98.1	99.3	99.7	98.2	98.3	98.7
Eligible women											
Completed (EWC)	95.1	93.2	96.2	96.9	95.8	93.0	96.3	97.8	97.8	96.8	96.2
Not at home (EWNH)	2.9	3.9	2.3	1.8	2.7	3.7	2.2	1.6	1.2	1.7	2.2
Postponed (EWP)	0.1	0.2	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
Refused (EWR)	0.4	0.4	0.4	0.1	0.5	0.4	0.2	0.0	0.0	0.2	0.2
Partly completed (EWPC)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
Incapacitated (EWI)	0.7	0.8	0.7	1.0	0.7	1.1	1.2	0.5	0.9	1.1	0.9
Other (EWO)	0.6	1.4	0.1	0.1	0.1	1.6	0.1	0.0	0.0	0.0	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	3,343	1,205	2,138	5,753	1,535	1,509	1,470	1,450	1,446	1,686	9,096
Eligible women response rate (EWRR)	95.1	93.2	96.2	96.9	95.8	93.0	96.3	97.8	97.8	96.8	96.2
Overall response rate (ORR)	93.6	91.4	94.9	95.8	94.6	91.3	95.6	97.5	96.1	95.2	95.0

[1] Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$\frac{100 \times C}{C + HP + R + DNF}$$

[2] Using the number of eligible women falling in to specific response categories, the eligible woman response rate (EWRR) is calculated as:

$$\frac{100 \times EWC}{EWC + EWNH + EWP + EWR + EWPC + EWI + EWO}$$

SAMPLING ERRORS

APPENDIX B

The estimates from a sample survey are affected by two types of errors: (1) nonsampling errors, and (2) sampling errors. Nonsampling errors are the results of mistakes made in implementing data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and data entry errors. Although numerous efforts were made during the implementation of the 2002 EDHS to minimize this type of error, nonsampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling errors, on the other hand, can be evaluated statistically. The sample of respondents selected in the 2002 EDHS is only one of many samples that could have been selected from the same population, using the same design and expected size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability between all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

A sampling error is usually measured in terms of the *standard error* for a particular statistic (mean, percentage, etc.), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which the true value for the population can reasonably be assumed to fall. For example, for any given statistic calculated from a sample survey, the value of that statistic will fall within a range of plus or minus two times the standard error of that statistic in 95 percent of all possible samples of identical size and design.

If the sample of respondents had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the 2002 EDHS sample is the result of a multi-stage stratified design, and, consequently, it was necessary to use more complex formulae. The computer software used to calculate sampling errors for the 2002 EDHS is the ISSA Sampling Error Module (ISSAS). This module used the Taylor linearization method of variance estimation for survey estimates that are means or proportions. The Jackknife repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

The Taylor linearization method treats any percentage or average as a ratio estimate, $r = y/x$, where y represents the total sample value for variable y, and x represents the total number of cases in the group or subgroup under consideration. The variance of r is computed using the formula given below, with the standard error being the square root of the variance:

$$\text{var}(r) = \frac{1-f}{x^2}\sum_{h=1}^{H}\left[\frac{m_h}{m_h-1}\left(\sum_{i=1}^{m_h} z_{hi}^2 - \frac{z_h^2}{m_h}\right)\right]$$

in which

$$z_{hi} = y_{hi} - r.x_{hi}, \text{ and } z_h = y_h - r.x_h$$

where h represents the stratum which varies from 1 to H,
m_h is the total number of clusters selected in the h^{th} stratum,
y_{hi} is the sum of the values of variable y in i^{th} cluster in the h^{th} stratum,

x_{hi} is the sum of the number of cases in i^{th} cluster in the h^{th} stratum, and
f is the overall sampling fraction, which is so small that it is ignored.

The Jackknife repeated replication method derives estimates of complex rates from each of several replications of the parent sample, and calculates standard errors for these estimates using simple formulae. Each replication considers *all but one* clusters in the calculation of the estimates. Pseudo-independent replications are thus created. In the 2002 EDHS, there were 368 non-empty clusters. Hence, 368 replications were created. The variance of a rate r is calculated as follows:

$$SE^2(r) = \text{var}(r) = \frac{1}{k(k-1)} \sum_{i=1}^{k} (r_i - r)^2$$

in which

$$r_i = kr - (k-1)\, r_{(i)}$$

where r is the estimate computed from the full sample of 368 clusters,
$r_{(i)}$ is the estimate computed from the reduced sample of 367 clusters (i^{th} cluster excluded), and
k is the total number of clusters.

In addition to the standard error, ISSAS computes the design effect (DEFT) for each estimate, which is defined as the ratio between the standard error using the given sample design and the standard error that would result if a simple random sample had been used. A DEFT value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a value greater than 1.0 indicates the increase in the sampling error due to the use of a more complex and less statistically efficient design. ISSAS also computes the relative error and confidence limits for the estimates.

Sampling errors for the 2002 EDHS are calculated for selected variables considered to be of primary interest. The results are presented in this appendix for the country as a whole, for total urban, Asmara, other towns, and rural areas, and for each of six the zobas in the country. For each variable, the type of statistic (mean, proportion, or rate) and the base population are given in Table B.1. Tables B.2 to B.12 present the value of the statistic (R), its standard error (SE), the number of unweighted (N) and weighted (WN) cases, the design effect (DEFT), the relative standard error (SE/R), and the 95 percent confidence limits (R±2SE), for each variable. The DEFT is considered undefined when the standard error assuming a simple random sample is zero (when the estimate is close to 0 or 1).

In general, the relative standard error for most estimates for the country as a whole is small, except for estimates of very small proportions. There are some differentials in the relative standard error for the estimates of sub-populations. For example, for the variable *contraceptive use for currently married women age 15-49*, the relative standard errors as a percent of the estimated mean for the whole country, for urban areas, and for rural areas are 6.7 percent, 7.0 percent, and 14.8 percent, respectively.

The confidence interval (e.g., as calculated for *contraceptive use for currently married women age 15-49)* can be interpreted as follows: the overall national sample proportion is 0.080 and its standard error is 0.005. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate, i.e. 0.080±2 (0.005). There is a high probability (95 percent) that the *true* average proportion of contraceptive use for currently married women age 15 to 49 is between 0.070 and 0.090.

Table B.1 List of selected variables for sampling errors, Eritrea 2002

Variable	Estimate	Base population
Urban residence	Proportion	All women
No education	Proportion	All women
Literate	Proportion	All women
Primary school net attendance ratio	Proportion	Children 7-11 years
Secondary education or higher	Proportion	All women
Migrant	Proportion	All women
Migrant due to marriage	Proportion	Migrant women
Adolescent childbearing	Proportion	Women 15-19
Never married	Proportion	All women
Currently married	Proportion	All women
Married before age 20	Proportion	Women age 20-49
Had first sexual intercourse before age 18	Proportion	Women age 25-49
Currently pregnant	Proportion	All women
Children ever born	Mean	All women
Children ever born to women age 40-49	Mean	Women 40-49
Children surviving	Mean	All women
Know any contraceptive method	Proportion	Currently married women
Know any modern method	Proportion	Currently married women
Ever used any contraceptive method	Proportion	Currently married women
Currently using any contraceptive method	Proportion	Currently married women
Current using a modern method	Proportion	Currently married women
Currently using pill	Proportion	Currently married women
Currently using IUD	Proportion	Currently married women
Currently using injectables	Proportion	Currently married women
Currently using Norplant	Proportion	Currently married women
Currently using condom	Proportion	Currently married women
Currently using female sterilization	Proportion	Currently married women
Currently using periodic abstinence	Proportion	Currently married women
Currently using withdrawal	Proportion	Currently married women
Used public sector source for contraceptive	Proportion	Currently married women using modern methods
Want no more children	Proportion	Currently married women
Want to delay birth at least two years	Proportion	Currently married women
Ideal family size	Mean	All women
Mother received tetanus injection for last birth	Proportion	Women with at least one live birth in five years before survey
Mother received medical assistance at delivery	Proportion	Births occurring 1-59 months before survey
Child had diarrhea in the last two weeks	Proportion	Children under age five
Child treated for diarrhea with ORS solution	Proportion	Children with diarrhea in two weeks before interview
Child received medical treatment for diarrhea	Proportion	Children with diarrhea in two weeks before interview
Child's vaccination card seen	Proportion	Children age 12-23 months
Child received BCG vaccination	Proportion	Children age 12-23 months
Child received DPT vaccination (three doses)	Proportion	Children age 12-23 months
Child received polio vaccination (three doses)	Proportion	Children age 12-23 months
Child received measles vaccination	Proportion	Children age 12-23 months
Child fully immunized	Proportion	Children age 12-23 months
Weight-for-height (below –2 SD)	Proportion	Children age 0-59 months
Height-for-age (below –2 SD)	Proportion	Children age 0-59 months
Weight-for-age (below –2 SD)	Proportion	Children age 0-59 months
Total fertility rate (three years)	Rate	All women
Neonatal mortality rate	Rate	Births in 5 (10) years before the survey
Postneonatal mortality rate	Rate	Births in 5 (10) years before the survey
Infant mortality rate	Rate	Births in 5 (10) years before the survey
Child mortality rate	Rate	Births in 5 (10) years before the survey surviving to age one
Under-five mortality rate	Rate	Births in 5 (10) years before the survey

Table B.2 Sampling errors for selected variables, total sample, Eritrea 2002

Variable	Value (R)	Standard error (SE)	Number of cases: Un-weighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits (R-2SE)	Confidence limits (R+2SE)
Urban residence	0.430	0.010	8754	8754	1.970	0.024	0.409	0.451
No education	0.501	0.011	8754	8754	2.032	0.022	0.479	0.522
Literate	0.491	0.010	8754	8754	1.953	0.021	0.470	0.512
Primary school net attendance ratio	0.612	0.011	6947	6859	1.645	0.018	0.590	0.633
Secondary education or higher	0.201	0.008	8754	8754	1.984	0.042	0.184	0.218
Migrant	0.540	0.010	8754	8754	1.832	0.018	0.520	0.560
Migrant due to marriage	0.407	0.013	4285	4727	1.731	0.032	0.381	0.433
Adolescent childbearing	0.140	0.010	1861	2001	1.201	0.069	0.120	0.159
Never married	0.233	0.007	8754	8754	1.502	0.029	0.220	0.247
Currently married	0.655	0.008	8754	8754	1.545	0.012	0.639	0.671
Married before age 20	0.629	0.008	6893	6753	1.441	0.013	0.612	0.646
Had first sexual intercourse before 18	0.506	0.009	5507	5298	1.385	0.018	0.487	0.524
Children ever born	2.662	0.037	8754	8754	1.244	0.014	2.587	2.737
Children ever born to women age 40-49	5.916	0.098	1645	1561	1.377	0.017	5.720	6.112
Children surviving	2.298	0.031	8754	8754	1.197	0.014	2.236	2.361
Currently pregnant	0.088	0.004	8754	8754	1.199	0.041	0.081	0.095
Know any contraceptive method	0.875	0.009	5970	5733	2.144	0.010	0.857	0.893
Know any modern method	0.850	0.010	5970	5733	2.068	0.011	0.831	0.869
Ever used any contraceptive method	0.223	0.009	5970	5733	1.644	0.040	0.205	0.241
Currently using any method	0.080	0.005	5970	5733	1.540	0.067	0.070	0.091
Current using a modern method	0.051	0.005	5970	5733	1.643	0.091	0.042	0.061
Currently using pill	0.014	0.003	5970	5733	1.737	0.186	0.009	0.020
Currently using IUD	0.004	0.001	5970	5733	1.238	0.268	0.002	0.005
Currently using injectables	0.026	0.003	5970	5733	1.401	0.112	0.020	0.031
Currently using Norplant	0.000	0.000	5970	5733	0.467	0.999	0.000	0.000
Currently using condom	0.006	0.001	5970	5733	1.218	0.203	0.004	0.008
Currently using female sterilization	0.002	0.001	5970	5733	1.066	0.352	0.000	0.003
Currently using periodic abstinence	0.007	0.001	5970	5733	1.235	0.194	0.004	0.009
Currently using withdrawal	0.001	0.000	5970	5733	1.274	0.585	0.000	0.002
Used public sector source for contraceptive	0.740	0.029	272	334	1.106	0.040	0.681	0.799
Want no more children	0.176	0.006	5970	5733	1.282	0.036	0.163	0.188
Want to delay next birth at least two years	0.386	0.009	5970	5733	1.382	0.023	0.369	0.404
Ideal family size	5.778	0.045	7452	7689	1.521	0.008	5.688	5.868
Mother received tetanus injection for last birth	0.502	0.012	4271	4175	1.507	0.023	0.479	0.525
Mother received medical assistance at delivery	0.283	0.012	6366	6156	1.682	0.041	0.259	0.306
Child had diarrhea in the last two weeks	0.132	0.005	5893	5748	1.210	0.042	0.121	0.143
Child treated for diarrhea with ORS solution	0.447	0.022	740	759	1.163	0.049	0.403	0.490
Child received medical treatment for diarrhea	0.419	0.023	740	759	1.238	0.054	0.374	0.464
Child's vaccination card seen	0.767	0.019	971	959	1.386	0.025	0.729	0.806
Child received BCG vaccination	0.914	0.013	971	959	1.445	0.015	0.887	0.941
Child received DPT vaccination (three doses)	0.828	0.016	971	959	1.315	0.020	0.796	0.860
Child received polio vaccination (three doses)	0.833	0.015	971	959	1.228	0.018	0.803	0.863
Child received measles vaccination	0.842	0.015	971	959	1.270	0.018	0.811	0.872
Child fully immunized	0.759	0.017	971	959	1.246	0.023	0.725	0.794
Weight-for-height (below -2 SD)	0.126	0.005	5551	5466	1.097	0.040	0.116	0.136
Height-for-age (below -2 SD)	0.376	0.008	5551	5466	1.232	0.022	0.360	0.393
Weight-for-age (below -2 SD)	0.396	0.008	5551	5466	1.175	0.021	0.380	0.413
Total fertility rate (three years)	4.767	0.126	na	24327	1.565	0.027	4.515	5.020
Neonatal mortality rate (0-4 years)	23.620	2.498	6518	6315	1.200	0.106	18.624	28.616
Postneonatal mortality rate (0-4 years)	24.049	2.205	6531	6325	1.116	0.092	19.638	28.460
Infant mortality rate (0-4 years)	47.669	3.317	6536	6328	1.163	0.070	41.035	54.302
Infant mortality rate (0-4 years)	66.596	3.809	7044	6769	1.161	0.057	58.979	74.213
Infant mortality rate (0-4 years)	72.829	4.591	5346	5030	1.117	0.063	63.647	82.010
Child mortality rate (0-4 years)	47.869	3.236	6668	6456	1.210	0.068	41.397	54.340
Under-five mortality rate (0-4 years)	93.256	4.754	6691	6472	1.269	0.051	83.747	102.765

na = Not applicable

Table B.3 Sampling errors for selected variables, urban sample, Eritrea 2002

Variable	Value (R)	Standard error (SE)	Number of cases: Un-weighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits (R-2SE)	Confidence limits (R+2SE)
Urban residence	1.000	0.000	3180	3767	na	0.000	1.000	1.000
No education	0.227	0.013	3180	3767	1.720	0.056	0.201	0.252
Literate	0.760	0.012	3180	3767	1.595	0.016	0.736	0.784
Primary school net attendance ratio	0.800	0.014	1910	2198	1.395	0.018	0.772	0.828
Secondary education or higher	0.412	0.014	3180	3767	1.638	0.035	0.383	0.440
Migrant	0.628	0.016	3180	3767	1.836	0.025	0.596	0.659
Migrant due to marriage	0.215	0.014	1985	2364	1.570	0.067	0.186	0.243
Adolescent childbearing	0.076	0.011	742	917	1.148	0.147	0.054	0.099
Currently married	0.522	0.012	3180	3767	1.334	0.023	0.499	0.546
Currently pregnant	0.070	0.006	3180	3767	1.271	0.082	0.059	0.082
Know any contraceptive method	0.977	0.006	1719	1967	1.573	0.006	0.966	0.988
Know any modern method	0.972	0.006	1719	1967	1.522	0.006	0.960	0.984
Ever used any contraceptive method	0.437	0.018	1719	1967	1.468	0.040	0.401	0.472
Currently using any method	0.165	0.012	1719	1967	1.293	0.070	0.142	0.188
Current using a modern method	0.123	0.011	1719	1967	1.374	0.089	0.101	0.144
Currently using pill	0.033	0.007	1719	1967	1.553	0.203	0.020	0.046
Currently using IUD	0.010	0.003	1719	1967	1.123	0.264	0.005	0.016
Currently using injectables	0.058	0.007	1719	1967	1.211	0.117	0.045	0.072
Currently using Norplant	0.000	0.000	1719	1967	0.428	0.998	0.000	0.000
Currently using condom	0.016	0.003	1719	1967	1.139	0.217	0.009	0.023
Currently using female sterilization	0.004	0.001	1719	1967	0.965	0.372	0.001	0.007
Currently using periodic abstinence	0.013	0.003	1719	1967	1.153	0.239	0.007	0.020
Currently using withdrawal	0.001	0.001	1719	1967	1.312	0.893	0.000	0.003
Ideal family size	5.042	0.062	2928	3522	1.496	0.012	4.918	5.166
Mother received tetanus injection for last birth	0.645	0.018	1227	1448	1.302	0.028	0.609	0.680
Mother received medical assistance at delivery	0.647	0.022	1712	2030	1.556	0.033	0.603	0.690
Child had diarrhea in the last two weeks	0.107	0.009	1604	1931	1.204	0.088	0.088	0.126
Child treated for diarrhea with ORS solution	0.589	0.040	169	207	1.069	0.069	0.508	0.670
Child received medical treatment for diarrhea	0.437	0.043	169	207	1.142	0.098	0.352	0.522
Child's vaccination card seen	0.827	0.030	289	355	1.359	0.036	0.768	0.887
Child received BCG vaccination	0.976	0.010	289	355	1.127	0.010	0.956	0.996
Child received DPT vaccination (three doses)	0.935	0.014	289	355	0.961	0.015	0.907	0.962
Child received polio vaccination (three doses)	0.913	0.017	289	355	1.015	0.018	0.879	0.946
Child received measles vaccination	0.938	0.015	289	355	1.099	0.016	0.908	0.969
Child fully immunized	0.884	0.020	289	355	1.095	0.023	0.843	0.924
Weight-for-height (below -2 SD)	0.086	0.008	1528	1826	1.168	0.097	0.069	0.103
Height-for-age (below -2 SD)	0.279	0.014	1528	1826	1.163	0.049	0.252	0.307
Weight-for-age (below -2 SD)	0.291	0.014	1528	1826	1.160	0.048	0.263	0.319
Total fertility rate (three years)	3.485	0.152	na	10406	1.396	0.043	3.181	3.788
Neonatal mortality rate (0-9 years)	22.762	3.384	3631	4231	1.199	0.149	15.993	29.531
Postneonatal mortality rate (0-9 years)	25.593	3.232	3632	4235	1.119	0.126	19.129	32.056
Infant mortality rate (0-9 years)	48.354	5.189	3634	4235	1.309	0.107	37.976	58.732
Child mortality rate (0-9 years)	39.615	4.106	3665	4264	1.211	0.104	31.403	47.828
Under-five mortality rate (0-9 years)	86.054	7.107	3670	4269	1.413	0.083	71.840	100.268

na = Not applicable

Table B.4 Sampling errors for selected variables, Asmara sample, Eritrea 2002

Variable	Value (R)	Standard error (SE)	Number of cases: Un-weighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits (R-2SE)	Confidence limits (R+2SE)
Urban residence	1.000	0.000	1123	1899	na	0.000	1.000	1.000
No education	0.110	0.012	1123	1899	1.320	0.112	0.086	0.135
Literate	0.880	0.012	1123	1899	1.258	0.014	0.856	0.904
Primary school net attendance ratio	0.881	0.016	508	831	1.089	0.019	0.848	0.913
Secondary education or higher	0.579	0.018	1123	1899	1.230	0.031	0.543	0.616
Migrant	0.560	0.023	1123	1899	1.577	0.042	0.513	0.606
Migrant due to marriage	0.189	0.016	625	1062	0.999	0.083	0.158	0.221
Adolescent childbearing	0.043	0.013	276	456	1.074	0.304	0.017	0.070
Currently married	0.457	0.014	1123	1899	0.952	0.031	0.429	0.485
Currently pregnant	0.060	0.009	1123	1899	1.221	0.145	0.042	0.077
Know any contraceptive method	0.992	0.004	505	868	0.931	0.004	0.985	1.000
Know any modern method	0.986	0.005	505	868	0.916	0.005	0.977	0.996
Ever used any contraceptive method	0.584	0.028	505	868	1.264	0.047	0.529	0.640
Currently using any method	0.232	0.022	505	868	1.150	0.093	0.189	0.276
Current using a modern method	0.176	0.020	505	868	1.156	0.111	0.137	0.215
Currently using pill	0.051	0.013	505	868	1.368	0.264	0.024	0.077
Currently using IUD	0.021	0.006	505	868	0.914	0.276	0.009	0.033
Currently using injectables	0.073	0.010	505	868	0.841	0.134	0.053	0.092
Currently using Norplant	0.000	0.000	505	868	na	na	0.000	0.000
Currently using condom	0.024	0.006	505	868	0.910	0.260	0.011	0.036
Currently using female sterilization	0.005	0.003	505	868	0.929	0.578	0.000	0.011
Currently using periodic abstinence	0.021	0.007	505	868	1.029	0.311	0.008	0.034
Currently using withdrawal	0.003	0.003	505	868	1.126	0.998	0.000	0.008
Ideal family size	4.678	0.080	1074	1824	1.297	0.017	4.518	4.838
Mother received tetanus injection for last birth	0.608	0.028	356	618	1.082	0.046	0.552	0.663
Mother received medical assistance at delivery	0.867	0.020	487	844	1.156	0.024	0.826	0.908
Child had diarrhea in the last two weeks	0.090	0.013	466	810	0.965	0.143	0.065	0.116
Child treated for diarrhea with ORS solution	0.667	0.083	44	73	1.197	0.125	0.500	0.833
Child received medical treatment for diarrhea	0.480	0.071	44	73	0.965	0.148	0.338	0.622
Child's vaccination card seen	0.802	0.048	99	175	1.230	0.060	0.706	0.898
Child received BCG vaccination	0.987	0.010	99	175	0.840	0.010	0.967	1.006
Child received DPT vaccination (three doses)	0.954	0.021	99	175	1.040	0.022	0.911	0.997
Child received polio vaccination (three doses)	0.911	0.027	99	175	0.948	0.029	0.858	0.964
Child received measles vaccination	0.961	0.022	99	175	1.165	0.023	0.916	1.005
Child fully immunized	0.892	0.034	99	175	1.118	0.038	0.823	0.960
Weight-for-height (below -2 SD)	0.040	0.010	439	744	1.104	0.250	0.020	0.060
Height-for-age (below -2 SD)	0.179	0.020	439	744	1.116	0.112	0.139	0.219
Weight-for-age (below -2 SD)	0.182	0.016	439	744	0.874	0.090	0.149	0.214
Total fertility rate (three years)	3.040	0.216	na	5380	1.213	0.071	2.608	3.473

na = Not applicable

Table B.5 Sampling errors for selected variables, other towns sample, Eritrea 2002

Variable	Value (R)	Standard error (SE)	Number of cases: Un-weighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits (R-2SE)	Confidence limits (R+2SE)
Urban residence	1.000	0.000	2057	1868	na	0.000	1.000	1.000
No education	0.345	0.021	2057	1868	2.011	0.061	0.303	0.387
Literate	0.637	0.021	2057	1868	1.936	0.032	0.596	0.678
Primary school net attendance ratio	0.751	0.020	1402	1367	1.581	0.026	0.711	0.790
Secondary education or higher	0.242	0.017	2057	1868	1.851	0.072	0.207	0.276
Migrant	0.697	0.017	2057	1868	1.700	0.025	0.662	0.731
Migrant due to marriage	0.236	0.023	1362	1301	2.006	0.098	0.190	0.282
Adolescent childbearing	0.109	0.016	466	461	1.136	0.151	0.076	0.142
Currently married	0.588	0.018	2057	1868	1.636	0.030	0.553	0.624
Currently pregnant	0.081	0.007	2057	1868	1.230	0.091	0.066	0.096
Know any contraceptive method	0.965	0.010	1214	1099	1.828	0.010	0.945	0.984
Know any modern method	0.961	0.010	1214	1099	1.802	0.010	0.940	0.981
Ever used any contraceptive method	0.320	0.022	1214	1099	1.612	0.067	0.277	0.363
Currently using any method	0.112	0.013	1214	1099	1.410	0.114	0.087	0.138
Current using a modern method	0.081	0.012	1214	1099	1.557	0.151	0.056	0.105
Currently using pill	0.019	0.006	1214	1099	1.410	0.292	0.008	0.030
Currently using IUD	0.002	0.001	1214	1099	1.072	0.710	0.000	0.005
Currently using injectables	0.047	0.010	1214	1099	1.611	0.207	0.028	0.067
Currently using Norplant	0.000	0.000	1214	1099	0.480	0.996	0.000	0.001
Currently using condom	0.009	0.004	1214	1099	1.354	0.397	0.002	0.017
Currently using female sterilization	0.003	0.001	1214	1099	0.695	0.367	0.001	0.005
Currently using periodic abstinence	0.007	0.002	1214	1099	0.960	0.324	0.003	0.012
Currently using withdrawal	0.000	0.000	1214	1099	0.552	0.998	0.000	0.001
Ideal family size	5.432	0.093	1854	1698	1.676	0.017	5.246	5.619
Mother received tetanus injection for last birth	0.672	0.023	871	830	1.484	0.034	0.626	0.718
Mother received medical assistance at delivery	0.489	0.030	1225	1186	1.831	0.062	0.429	0.550
Child had diarrhea in the last two weeks	0.119	0.013	1138	1121	1.388	0.109	0.093	0.145
Child treated for diarrhea with ORS solution	0.546	0.039	125	134	0.920	0.072	0.468	0.625
Child received medical treatment for diarrhea	0.413	0.052	125	134	1.285	0.127	0.308	0.518
Child's vaccination card seen	0.852	0.035	190	180	1.371	0.041	0.783	0.921
Child received BCG vaccination	0.966	0.017	190	180	1.343	0.018	0.931	1.000
Child received DPT vaccination (three doses)	0.916	0.017	190	180	0.869	0.019	0.881	0.950
Child received polio vaccination (three doses)	0.914	0.020	190	180	1.004	0.022	0.874	0.954
Child received measles vaccination	0.917	0.019	190	180	0.986	0.021	0.878	0.955
Child fully immunized	0.876	0.022	190	180	0.935	0.025	0.832	0.919
Weight-for-height (below -2 SD)	0.117	0.012	1089	1081	1.235	0.100	0.094	0.141
Height-for-age (below -2 SD)	0.349	0.019	1089	1081	1.313	0.055	0.310	0.387
Weight-for-age (below -2 SD)	0.367	0.019	1089	1081	1.293	0.053	0.328	0.405
Total fertility rate (three years)	3.925	0.188	na	5027	1.393	0.048	3.549	4.302

na = Not applicable

Table B.6 Sampling errors for selected variables, rural sample, Eritrea 2002

Variable	Value (R)	Standard error (SE)	Number of cases: Un-weighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits (R-2SE)	Confidence limits (R+2SE)
Urban residence	0.000	0.000	5574	4987	na	na	0.000	0.000
No education	0.708	0.013	5574	4987	2.169	0.019	0.681	0.734
Literate	0.289	0.013	5574	4987	2.130	0.045	0.263	0.315
Primary school net attendance ratio	0.523	0.014	5037	4660	1.801	0.027	0.495	0.551
Secondary education or higher	0.042	0.006	5574	4987	2.323	0.149	0.029	0.054
Migrant	0.474	0.012	5574	4987	1.863	0.026	0.449	0.499
Migrant due to marriage	0.599	0.021	2300	2363	2.018	0.034	0.557	0.640
Adolescent childbearing	0.193	0.015	1119	1084	1.263	0.077	0.163	0.223
Currently married	0.755	0.009	5574	4987	1.571	0.012	0.737	0.773
Currently pregnant	0.102	0.005	5574	4987	1.152	0.046	0.092	0.111
Know any contraceptive method	0.822	0.013	4251	3766	2.218	0.016	0.796	0.848
Know any modern method	0.787	0.013	4251	3766	2.135	0.017	0.760	0.813
Ever used any contraceptive method	0.111	0.009	4251	3766	1.795	0.078	0.094	0.129
Currently using any method	0.036	0.005	4251	3766	1.868	0.148	0.025	0.047
Current using a modern method	0.014	0.004	4251	3766	2.227	0.286	0.006	0.022
Currently using pill	0.005	0.002	4251	3766	2.037	0.459	0.000	0.009
Currently using IUD	0.000	0.000	4251	3766	na	na	0.000	0.000
Currently using injectables	0.008	0.002	4251	3766	1.582	0.265	0.004	0.013
Currently using Norplant	0.000	0.000	4251	3766	na	na	0.000	0.000
Currently using condom	0.001	0.001	4251	3766	1.138	0.603	0.000	0.002
Currently using female sterilization	0.000	0.000	4251	3766	1.127	1.001	0.000	0.001
Currently using periodic abstinence	0.003	0.001	4251	3766	1.261	0.336	0.001	0.006
Currently using withdrawal	0.001	0.000	4251	3766	1.100	0.717	0.000	0.001
Ideal family size	6.401	0.057	4524	4167	1.467	0.009	6.286	6.515
Mother received tetanus injection for last birth	0.426	0.015	3044	2727	1.631	0.034	0.397	0.456
Mother received medical assistance at delivery	0.104	0.009	4654	4125	1.784	0.090	0.085	0.123
Child had diarrhea in the last two weeks	0.145	0.007	4289	3817	1.231	0.046	0.131	0.158
Child treated for diarrhea with ORS solution	0.393	0.026	571	552	1.281	0.067	0.341	0.446
Child received medical treatment for diarrhea	0.412	0.027	571	552	1.308	0.064	0.359	0.465
Child's vaccination card seen	0.732	0.025	682	604	1.426	0.034	0.683	0.781
Child received BCG vaccination	0.877	0.020	682	604	1.541	0.023	0.837	0.917
Child received DPT vaccination (three doses)	0.765	0.024	682	604	1.433	0.031	0.718	0.813
Child received polio vaccination (three doses)	0.786	0.021	682	604	1.321	0.027	0.744	0.828
Child received measles vaccination	0.785	0.021	682	604	1.308	0.027	0.743	0.827
Child fully immunized	0.686	0.023	682	604	1.295	0.034	0.640	0.733
Weight-for-height (below -2 SD)	0.145	0.006	4023	3641	1.106	0.044	0.133	0.158
Height-for-age (below -2 SD)	0.425	0.010	4023	3641	1.212	0.023	0.405	0.445
Weight-for-age (below -2 SD)	0.449	0.009	4023	3641	1.127	0.021	0.430	0.468
Total fertility rate (three years)	5.702	0.143	na	13921	1.339	0.025	5.416	5.988
Neonatal mortality rate (0-9 years)	32.923	2.405	9932	8826	1.175	0.073	28.114	37.732
Postneonatal mortality rate (0-9 years)	29.127	2.459	9938	8831	1.344	0.084	24.209	34.045
Infant mortality rate (0-9 years)	62.050	3.426	9941	8833	1.253	0.055	55.198	68.902
Child mortality rate (0-9 years)	58.664	3.550	10051	8935	1.285	0.061	51.565	65.763
Under-five mortality rate (0-9 years)	117.074	5.228	10063	8944	1.397	0.045	106.617	127.531

na = Not applicable

Table B.7 Sampling errors for selected variables, zoba Debubawi Keih Bahri sample, Eritrea 2002

Variable	Value (R)	Standard error (SE)	Number of cases: Un-weighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits (R-2SE)	Confidence limits (R+2SE)
Urban residence	0.630	0.037	1470	324	2.923	0.058	0.557	0.704
No education	0.517	0.032	1470	324	2.420	0.061	0.454	0.580
Literate	0.455	0.032	1470	324	2.478	0.071	0.391	0.520
Primary school net attendance ratio	0.527	0.036	920	189	1.764	0.068	0.455	0.599
Secondary education or higher	0.208	0.022	1470	324	2.041	0.104	0.165	0.251
Migrant	0.437	0.031	1470	324	2.376	0.070	0.375	0.498
Migrant due to marriage	0.234	0.026	541	142	1.416	0.110	0.182	0.286
Adolescent childbearing	0.137	0.028	246	56	1.262	0.202	0.082	0.193
Currently married	0.649	0.016	1470	324	1.265	0.024	0.617	0.680
Currently pregnant	0.089	0.007	1470	324	0.954	0.079	0.075	0.103
Know any contraceptive method	0.778	0.026	1005	210	2.016	0.034	0.725	0.831
Know any modern method	0.728	0.031	1005	210	2.229	0.043	0.665	0.790
Ever used any contraceptive method	0.220	0.027	1005	210	2.083	0.124	0.165	0.274
Currently using any method	0.071	0.010	1005	210	1.188	0.136	0.052	0.090
Current using a modern method	0.051	0.007	1005	210	0.951	0.130	0.038	0.064
Currently using pill	0.013	0.004	1005	210	0.989	0.267	0.006	0.021
Currently using IUD	0.000	0.000	1005	210	na	na	0.000	0.000
Currently using injectables	0.025	0.006	1005	210	1.125	0.221	0.014	0.036
Currently using Norplant	0.001	0.001	1005	210	0.980	0.977	0.000	0.003
Currently using condom	0.010	0.002	1005	210	0.552	0.172	0.007	0.014
Currently using female sterilization	0.001	0.001	1005	210	0.980	0.977	0.000	0.003
Currently using periodic abstinence	0.011	0.004	1005	210	1.321	0.393	0.002	0.020
Currently using withdrawal	0.001	0.001	1005	210	1.133	0.984	0.000	0.004
Ideal family size	5.690	0.214	1034	242	1.652	0.038	5.262	6.119
Mother received tetanus injection for last birth	0.635	0.032	656	136	1.658	0.051	0.571	0.699
Mother received medical assistance at delivery	0.419	0.045	974	195	2.196	0.107	0.330	0.508
Child had diarrhea in the last two weeks	0.073	0.010	860	174	1.024	0.131	0.054	0.092
Child treated for diarrhea with ORS solution	0.431	0.066	64	13	0.998	0.153	0.299	0.562
Child received medical treatment for diarrhea	0.356	0.078	64	13	1.230	0.220	0.200	0.513
Child's vaccination card seen	0.707	0.037	136	28	0.921	0.053	0.632	0.781
Child received BCG vaccination	0.908	0.019	136	28	0.724	0.021	0.870	0.945
Child received DPT vaccination (three doses)	0.765	0.044	136	28	1.163	0.057	0.677	0.853
Child received polio vaccination (three doses)	0.756	0.045	136	28	1.186	0.060	0.665	0.847
Child received measles vaccination	0.702	0.052	136	28	1.270	0.074	0.599	0.806
Child fully immunized	0.601	0.051	136	28	1.160	0.084	0.500	0.702
Weight-for-height (below -2 SD)	0.138	0.015	766	156	1.081	0.105	0.109	0.167
Height-for-age (below -2 SD)	0.374	0.025	766	156	1.319	0.066	0.325	0.424
Weight-for-age (below -2 SD)	0.411	0.019	766	156	1.004	0.047	0.373	0.450
Total fertility rate (three years)	3.873	0.248	na	901	1.412	0.064	3.377	4.369
Neonatal mortality rate (0-9 years)	55.328	6.249	2110	423	1.039	0.113	42.830	67.825
Postneonatal mortality rate (0-9 years)	67.014	6.140	2112	423	1.010	0.092	54.733	79.294
Infant mortality rate (0-9 years)	122.341	10.621	2113	423	1.279	0.087	101.100	143.583
Child mortality rate (0-9 years)	73.499	8.358	2131	427	1.245	0.114	56.783	90.215
Under-five mortality rate (0-9 years)	186.848	12.696	2135	427	1.253	0.068	161.457	212.239

na = Not applicable

Table B.8 Sampling errors for selected variables, zoba Maekel sample, Eritrea 2002

Variable	Value (R)	Standard error (SE)	Number of cases: Un-weighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits (R-2SE)	Confidence limits (R+2SE)
Urban residence	0.858	0.014	1404	2264	1.504	0.016	0.829	0.886
No education	0.143	0.012	1404	2264	1.256	0.082	0.120	0.167
Literate	0.850	0.011	1404	2264	1.190	0.013	0.828	0.873
Primary school net attendance ratio	0.875	0.014	826	1232	1.165	0.016	0.847	0.903
Secondary education or higher	0.520	0.017	1404	2264	1.272	0.033	0.486	0.554
Migrant	0.552	0.020	1404	2264	1.518	0.036	0.512	0.593
Migrant due to marriage	0.258	0.016	770	1250	0.985	0.060	0.227	0.289
Adolescent childbearing	0.063	0.015	358	564	1.158	0.237	0.033	0.093
Currently married	0.487	0.013	1404	2264	0.987	0.027	0.461	0.514
Currently pregnant	0.071	0.009	1404	2264	1.254	0.121	0.054	0.088
Know any contraceptive method	0.986	0.004	689	1103	0.874	0.004	0.978	0.994
Know any modern method	0.976	0.006	689	1103	0.994	0.006	0.965	0.988
Ever used any contraceptive method	0.516	0.027	689	1103	1.434	0.053	0.461	0.571
Currently using any method	0.196	0.018	689	1103	1.211	0.093	0.160	0.233
Current using a modern method	0.147	0.016	689	1103	1.215	0.112	0.114	0.179
Currently using pill	0.044	0.011	689	1103	1.425	0.254	0.021	0.066
Currently using IUD	0.017	0.005	689	1103	0.951	0.278	0.007	0.026
Currently using injectables	0.062	0.008	689	1103	0.876	0.130	0.046	0.078
Currently using Norplant	0.000	0.000	689	1103	na	na	0.000	0.000
Currently using condom	0.019	0.005	689	1103	0.932	0.257	0.009	0.028
Currently using female sterilization	0.004	0.002	689	1103	0.976	0.586	0.000	0.009
Currently using periodic abstinence	0.017	0.005	689	1103	1.060	0.310	0.006	0.027
Currently using withdrawal	0.002	0.002	689	1103	1.167	0.998	0.000	0.006
Ideal family size	4.853	0.075	1324	2150	1.287	0.015	4.703	5.003
Mother received tetanus injection for last birth	0.561	0.025	500	801	1.142	0.045	0.510	0.612
Mother received medical assistance at delivery	0.719	0.022	702	1118	1.043	0.030	0.676	0.763
Child had diarrhea in the last two weeks	0.092	0.011	670	1069	0.948	0.119	0.070	0.114
Child treated for diarrhea with ORS solution	0.653	0.068	63	98	1.136	0.105	0.517	0.790
Child received medical treatment for diarrhea	0.513	0.055	63	98	0.861	0.107	0.403	0.623
Child's vaccination card seen	0.810	0.043	123	205	1.239	0.053	0.723	0.896
Child received BCG vaccination	0.979	0.011	123	205	0.831	0.011	0.958	1.000
Child received DPT vaccination (three doses)	0.950	0.020	123	205	1.022	0.021	0.910	0.990
Child received polio vaccination (three doses)	0.919	0.023	123	205	0.962	0.025	0.873	0.966
Child received measles vaccination	0.961	0.020	123	205	1.149	0.020	0.922	1.001
Child fully immunized	0.892	0.030	123	205	1.104	0.034	0.831	0.953
Weight-for-height (below -2 SD)	0.061	0.008	635	984	0.856	0.134	0.045	0.077
Height-for-age (below -2 SD)	0.230	0.018	635	984	1.030	0.077	0.195	0.266
Weight-for-age (below -2 SD)	0.234	0.017	635	984	0.940	0.072	0.200	0.267
Total fertility rate (three years)	3.422	0.241	na	6260	1.338	0.070	2.941	3.903
Neonatal mortality rate (0-9 years)	18.658	4.004	1459	2289	0.996	0.215	10.649	26.666
Postneonatal mortality rate (0-9 years)	20.235	4.140	1459	2289	1.001	0.205	11.955	28.516
Infant mortality rate (0-9 years)	38.893	5.407	1459	2289	0.957	0.139	28.079	49.707
Child mortality rate (0-9 years)	21.997	3.655	1462	2293	0.851	0.166	14.688	29.306
Under-five mortality rate (0-9 years)	60.035	6.580	1462	2293	1.001	0.110	46.875	73.194

na = Not applicable

Table B.9 Sampling errors for selected variables, Zoba Semenawi Keih Bahri sample, Eritrea 2002

Variable	Value (R)	Standard error (SE)	Number of cases: Un-weighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits (R-2SE)	Confidence limits (R+2SE)
Urban residence	0.366	0.019	1416	1148	1.507	0.053	0.327	0.404
No education	0.718	0.021	1416	1148	1.734	0.029	0.677	0.760
Literate	0.267	0.022	1416	1148	1.840	0.081	0.224	0.310
Primary school net attendance ratio	0.427	0.026	1153	935	1.628	0.062	0.374	0.479
Secondary education or higher	0.057	0.011	1416	1148	1.771	0.192	0.035	0.079
Migrant	0.429	0.025	1416	1148	1.885	0.058	0.380	0.479
Migrant due to marriage	0.334	0.031	578	493	1.592	0.094	0.271	0.396
Adolescent childbearing	0.111	0.021	240	196	1.048	0.192	0.068	0.154
Currently married	0.712	0.015	1416	1148	1.259	0.021	0.682	0.742
Currently pregnant	0.089	0.009	1416	1148	1.167	0.099	0.072	0.107
Know any contraceptive method	0.869	0.019	1027	817	1.763	0.021	0.832	0.906
Know any modern method	0.847	0.020	1027	817	1.766	0.023	0.808	0.887
Ever used any contraceptive method	0.132	0.019	1027	817	1.813	0.145	0.094	0.170
Currently using any method	0.051	0.010	1027	817	1.449	0.196	0.031	0.071
Current using a modern method	0.032	0.008	1027	817	1.474	0.255	0.016	0.048
Currently using pill	0.009	0.005	1027	817	1.624	0.528	0.000	0.019
Currently using IUD	0.001	0.001	1027	817	1.153	0.991	0.000	0.004
Currently using injectables	0.015	0.004	1027	817	1.171	0.296	0.006	0.024
Currently using Norplant	0.000	0.000	1027	817	na	na	0.000	0.000
Currently using condom	0.002	0.002	1027	817	1.119	0.717	0.000	0.006
Currently using female sterilization	0.004	0.001	1027	817	0.754	0.386	0.001	0.007
Currently using periodic abstinence	0.004	0.002	1027	817	1.106	0.514	0.000	0.009
Currently using withdrawal	0.000	0.000	1027	817	na	na	0.000	0.000
Ideal family size	6.571	0.136	1210	976	1.640	0.021	6.300	6.842
Mother received tetanus injection for last birth	0.561	0.021	709	560	1.130	0.038	0.518	0.604
Mother received medical assistance at delivery	0.225	0.023	1083	845	1.488	0.102	0.179	0.271
Child had diarrhea in the last two weeks	0.150	0.016	997	778	1.302	0.104	0.119	0.181
Child treated for diarrhea with ORS solution	0.499	0.048	161	117	1.073	0.096	0.404	0.595
Child received medical treatment for diarrhea	0.332	0.060	161	117	1.433	0.180	0.213	0.452
Child's vaccination card seen	0.768	0.043	165	130	1.297	0.056	0.681	0.854
Child received BCG vaccination	0.891	0.035	165	130	1.421	0.039	0.821	0.961
Child received DPT vaccination (three doses)	0.788	0.035	165	130	1.076	0.044	0.718	0.857
Child received polio vaccination (three doses)	0.798	0.040	165	130	1.255	0.050	0.718	0.877
Child received measles vaccination	0.803	0.036	165	130	1.152	0.045	0.730	0.875
Child fully immunized	0.699	0.038	165	130	1.058	0.055	0.622	0.776
Weight-for-height (below -2 SD)	0.180	0.013	956	752	1.030	0.074	0.153	0.207
Height-for-age (below -2 SD)	0.419	0.024	956	752	1.465	0.057	0.371	0.467
Weight-for-age (below -2 SD)	0.512	0.022	956	752	1.300	0.043	0.467	0.556
Total fertility rate (three years)	4.514	0.237	na	3208	1.359	0.052	4.040	4.987
Neonatal mortality rate (0-9 years)	39.092	6.407	2292	1823	1.254	0.164	26.279	51.905
Postneonatal mortality rate (0-9 years)	38.406	4.504	2297	1829	1.032	0.117	29.398	47.414
Infant mortality rate (0-9 years)	77.498	8.966	2298	1830	1.310	0.116	59.566	95.430
Child mortality rate (0-9 years)	82.452	9.152	2341	1862	1.440	0.111	64.147	100.756
Under-five mortality rate (0-9 years)	153.560	11.709	2348	1869	1.352	0.076	130.141	176.978

na = Not applicable

Table B.10 Sampling errors for selected variables, zoba Anseba sample, Eritrea 2002

Variable	Value (R)	Standard error (SE)	Number of cases: Un-weighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits (R-2SE)	Confidence limits (R+2SE)
Urban residence	0.329	0.016	1418	1130	1.246	0.047	0.298	0.360
No education	0.595	0.023	1418	1130	1.742	0.038	0.550	0.641
Literate	0.404	0.021	1418	1130	1.589	0.051	0.363	0.446
Primary school net attendance ratio	0.533	0.025	1288	1052	1.745	0.047	0.482	0.583
Secondary education or higher	0.087	0.012	1418	1130	1.617	0.140	0.062	0.111
Migrant	0.465	0.023	1418	1130	1.754	0.050	0.419	0.512
Migrant due to marriage	0.538	0.036	642	526	1.830	0.067	0.466	0.610
Adolescent childbearing	0.096	0.018	322	266	1.100	0.188	0.060	0.132
Currently married	0.693	0.016	1418	1130	1.345	0.024	0.660	0.726
Currently pregnant	0.088	0.007	1418	1130	0.974	0.083	0.074	0.103
Know any contraceptive method	0.825	0.020	1003	784	1.648	0.024	0.786	0.865
Know any modern method	0.797	0.026	1003	784	2.034	0.032	0.746	0.849
Ever used any contraceptive method	0.088	0.015	1003	784	1.692	0.172	0.058	0.119
Currently using any method	0.044	0.012	1003	784	1.858	0.273	0.020	0.068
Current using a modern method	0.027	0.011	1003	784	2.076	0.392	0.006	0.049
Currently using pill	0.003	0.003	1003	784	1.400	0.746	0.000	0.009
Currently using IUD	0.001	0.001	1003	784	1.139	1.013	0.000	0.004
Currently using injectables	0.014	0.006	1003	784	1.542	0.403	0.003	0.026
Currently using Norplant	0.000	0.000	1003	784	na	na	0.000	0.000
Currently using condom	0.008	0.005	1003	784	1.736	0.606	0.000	0.018
Currently using female sterilization	0.000	0.000	1003	784	na	na	0.000	0.000
Currently using periodic abstinence	0.006	0.003	1003	784	1.105	0.462	0.000	0.011
Currently using withdrawal	0.000	0.000	1003	784	na	na	0.000	0.000
Ideal family size	6.531	0.093	1396	1112	1.487	0.014	6.345	6.718
Mother received tetanus injection for last birth	0.499	0.019	748	589	1.056	0.039	0.460	0.538
Mother received medical assistance at delivery	0.154	0.018	1159	911	1.429	0.120	0.117	0.191
Child had diarrhea in the last two weeks	0.101	0.010	1113	877	1.135	0.101	0.081	0.122
Child treated for diarrhea with ORS solution	0.432	0.047	112	89	1.007	0.110	0.337	0.526
Child received medical treatment for diarrhea	0.332	0.057	112	89	1.251	0.170	0.219	0.445
Child's vaccination card seen	0.924	0.018	182	149	0.925	0.019	0.888	0.960
Child received BCG vaccination	0.979	0.009	182	149	0.872	0.009	0.961	0.997
Child received DPT vaccination (three doses)	0.948	0.014	182	149	0.873	0.015	0.919	0.976
Child received polio vaccination (three doses)	0.930	0.017	182	149	0.926	0.019	0.896	0.965
Child received measles vaccination	0.938	0.016	182	149	0.890	0.017	0.907	0.970
Child fully immunized	0.915	0.018	182	149	0.867	0.019	0.880	0.950
Weight-for-height (below -2 SD)	0.156	0.013	1088	873	1.111	0.081	0.131	0.182
Height-for-age (below -2 SD)	0.405	0.020	1088	873	1.277	0.050	0.365	0.446
Weight-for-age (below -2 SD)	0.467	0.013	1088	873	0.824	0.029	0.440	0.494
Total fertility rate (three years)	5.644	0.250	na	3086	1.147	0.044	5.144	6.145
Neonatal mortality rate (0-9 years)	20.283	3.033	2448	1937	1.014	0.150	14.216	26.349
Postneonatal mortality rate (0-9 years)	16.281	2.438	2446	1935	0.875	0.150	11.406	21.157
Infant mortality rate (0-9 years)	36.564	3.972	2448	1937	0.980	0.109	28.620	44.509
Child mortality rate (0-9 years)	37.350	3.928	2467	1953	0.915	0.105	29.494	45.207
Under-five mortality rate (0-9 years)	72.549	5.715	2469	1954	0.995	0.079	61.119	83.978

na = Not applicable

Table B.11 Sampling errors for selected variables, zoba Gash-Barka sample, Eritrea 2002

Variable	Value (R)	Standard error (SE)	Number of cases: Un-weighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits (R-2SE)	Confidence limits (R+2SE)
Urban residence	0.196	0.011	1414	1500	1.025	0.055	0.174	0.218
No education	0.773	0.023	1414	1500	2.077	0.030	0.727	0.820
Literate	0.212	0.023	1414	1500	2.112	0.108	0.166	0.258
Primary school net attendance ratio	0.533	0.025	1288	1052	1.745	0.047	0.482	0.583
Secondary education or higher	0.033	0.009	1414	1500	1.929	0.276	0.015	0.052
Migrant	0.571	0.025	1414	1500	1.879	0.043	0.522	0.621
Migrant due to marriage	0.273	0.028	785	857	1.730	0.101	0.218	0.328
Adolescent childbearing	0.203	0.021	285	304	0.869	0.102	0.161	0.244
Currently married	0.761	0.015	1414	1500	1.333	0.020	0.731	0.791
Currently pregnant	0.102	0.010	1414	1500	1.245	0.099	0.082	0.122
Know any contraceptive method	0.696	0.032	1072	1142	2.289	0.046	0.631	0.760
Know any modern method	0.641	0.029	1072	1142	1.964	0.045	0.583	0.698
Ever used any contraceptive method	0.085	0.016	1072	1142	1.821	0.183	0.054	0.116
Currently using any method	0.019	0.005	1072	1142	1.251	0.274	0.009	0.030
Current using a modern method	0.011	0.005	1072	1142	1.479	0.428	0.002	0.020
Currently using pill	0.004	0.003	1072	1142	1.351	0.657	0.000	0.009
Currently using IUD	0.000	0.000	1072	1142	na	na	0.000	0.000
Currently using injectables	0.005	0.003	1072	1142	1.239	0.516	0.000	0.011
Currently using Norplant	0.000	0.000	1072	1142	na	na	0.000	0.000
Currently using condom	0.001	0.001	1072	1142	0.885	1.002	0.000	0.002
Currently using female sterilization	0.001	0.001	1072	1142	1.030	1.003	0.000	0.003
Currently using periodic abstinence	0.001	0.001	1072	1142	0.885	0.995	0.000	0.002
Currently using withdrawal	0.001	0.001	1072	1142	0.909	1.007	0.000	0.002
Ideal family size	6.221	0.128	1142	1216	1.567	0.021	5.965	6.478
Mother received tetanus injection for last birth	0.471	0.028	742	789	1.520	0.059	0.415	0.526
Mother received medical assistance at delivery	0.110	0.022	1071	1136	2.015	0.199	0.067	0.154
Child had diarrhea in the last two weeks	0.121	0.009	976	1039	0.857	0.074	0.103	0.139
Child treated for diarrhea with ORS solution	0.490	0.049	115	126	1.046	0.100	0.393	0.588
Child received medical treatment for diarrhea	0.491	0.059	115	126	1.297	0.119	0.374	0.608
Child's vaccination card seen	0.661	0.046	178	186	1.290	0.070	0.568	0.753
Child received BCG vaccination	0.871	0.028	178	186	1.100	0.032	0.815	0.927
Child received DPT vaccination (three doses)	0.735	0.041	178	186	1.236	0.056	0.652	0.817
Child received polio vaccination (three doses)	0.756	0.034	178	186	1.049	0.045	0.688	0.825
Child received measles vaccination	0.757	0.035	178	186	1.091	0.047	0.686	0.828
Child fully immunized	0.642	0.040	178	186	1.102	0.062	0.562	0.722
Weight-for-height (below -2 SD)	0.169	0.014	883	963	1.097	0.082	0.141	0.196
Height-for-age (below -2 SD)	0.448	0.016	883	963	0.901	0.035	0.416	0.479
Weight-for-age (below -2 SD)	0.496	0.015	883	963	0.850	0.030	0.466	0.525
Total fertility rate (three years)	5.115	0.242	na	4252	1.201	0.047	4.631	5.600
Neonatal mortality rate (10 years)	40.765	5.324	2287	2424	1.144	0.131	30.118	51.412
Postneonatal mortality rate (10 years)	25.238	3.871	2289	2426	1.189	0.153	17.495	32.980
Infant mortality rate (10 years)	66.002	6.278	2289	2426	1.129	0.095	53.447	78.558
Child mortality rate (10 years)	61.443	5.508	2310	2448	1.031	0.090	50.428	72.459
Under-five mortality rate (10 years)	123.390	9.123	2312	2450	1.224	0.074	105.145	141.636

na = Not applicable

Table B.12 Sampling errors for selected variables, zoba Debub sample, Eritrea 2002

Variable	Value (R)	Standard error (SE)	Number of cases: Un-weighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits (R-2SE)	Confidence limits (R+2SE)
Urban residence	0.224	0.021	1632	2388	2.078	0.096	0.181	0.267
No education	0.517	0.022	1632	2388	1.761	0.042	0.473	0.561
Literate	0.481	0.021	1632	2388	1.670	0.043	0.439	0.522
Primary school net attendance ratio	0.711	0.020	1541	2158	1.580	0.028	0.672	0.751
Secondary education or higher	0.126	0.014	1632	2388	1.653	0.108	0.099	0.153
Migrant	0.611	0.019	1632	2388	1.545	0.031	0.574	0.649
Migrant due to marriage	0.606	0.035	969	1460	2.203	0.057	0.537	0.675
Adolescent childbearing	0.207	0.022	410	616	1.085	0.105	0.163	0.250
Currently married	0.702	0.018	1632	2388	1.565	0.025	0.667	0.738
Currently pregnant	0.095	0.006	1632	2388	0.852	0.065	0.083	0.108
Know any contraceptive method	0.962	0.009	1174	1677	1.584	0.009	0.945	0.980
Know any modern method	0.951	0.011	1174	1677	1.702	0.011	0.930	0.973
Ever used any contraceptive method	0.232	0.015	1174	1677	1.192	0.063	0.202	0.261
Currently using any method	0.079	0.011	1174	1677	1.417	0.142	0.056	0.101
Current using a modern method	0.037	0.009	1174	1677	1.678	0.250	0.019	0.056
Currently using pill	0.010	0.004	1174	1677	1.504	0.441	0.001	0.018
Currently using IUD	0.000	0.000	1174	1677	na	na	0.000	0.000
Currently using injectables	0.026	0.007	1174	1677	1.544	0.276	0.012	0.040
Currently using Norplant	0.000	0.000	1174	1677	na	na	0.000	0.000
Currently using condom	0.001	0.001	1174	1677	0.946	0.743	0.000	0.003
Currently using female sterilization	0.000	0.000	1174	1677	na	na	0.000	0.000
Currently using periodic abstinence	0.005	0.002	1174	1677	1.058	0.419	0.001	0.010
Currently using withdrawal	0.001	0.001	1174	1677	0.921	0.998	0.000	0.002
Ideal family size	5.708	0.073	1346	1993	1.241	0.013	5.563	5.854
Mother received tetanus injection for last birth	0.447	0.027	916	1301	1.624	0.061	0.393	0.501
Mother received medical assistance at delivery	0.205	0.021	1377	1950	1.600	0.104	0.162	0.248
Child had diarrhea in the last two weeks	0.175	0.012	1277	1811	1.147	0.071	0.150	0.200
Child treated for diarrhea with ORS solution	0.350	0.037	225	317	1.074	0.105	0.277	0.424
Child received medical treatment for diarrhea	0.419	0.036	225	317	1.058	0.086	0.347	0.491
Child's vaccination card seen	0.727	0.044	187	261	1.304	0.061	0.638	0.816
Child received BCG vaccination	0.868	0.039	187	261	1.459	0.045	0.789	0.946
Child received DPT vaccination (three doses)	0.758	0.043	187	261	1.304	0.057	0.672	0.843
Child received polio vaccination (three doses)	0.790	0.038	187	261	1.205	0.048	0.714	0.865
Child received measles vaccination	0.787	0.037	187	261	1.182	0.047	0.712	0.862
Child fully immunized	0.696	0.042	187	261	1.200	0.060	0.612	0.781
Weight-for-height (below -2 SD)	0.098	0.010	1223	1738	1.115	0.099	0.079	0.118
Height-for-age (below -2 SD)	0.387	0.016	1223	1738	1.104	0.041	0.355	0.419
Weight-for-age (below -2 SD)	0.346	0.016	1223	1738	1.114	0.047	0.314	0.379
Total fertility rate (three years)	5.666	0.254	na	6620	1.258	0.045	5.158	6.175
Neonatal mortality rate (10 years)	26.762	3.427	2967	4162	1.032	0.128	19.907	33.617
Postneonatal mortality rate (10 years)	30.715	4.506	2967	4163	1.245	0.147	21.703	39.727
Infant mortality rate (10 years)	57.477	5.846	2968	4164	1.222	0.102	45.785	69.169
Child mortality rate (10 years)	56.316	5.778	3005	4216	1.143	0.103	44.761	67.872
Under-five mortality rate (10 years)	110.557	8.953	3007	4219	1.336	0.081	92.650	128.464

na = Not applicable

DATA QUALITY TABLES

APPENDIX C

Table C.1 Household age distribution

Single-year age distribution of the de facto household population by sex (weighted), Eritrea 2002

	Male		Female			Male		Female	
Age	Number	Percent	Number	Percent	Age	Number	Percent	Number	Percent
0	629	3.5	664	3.1	37	64	0.4	191	0.9
1	508	2.8	448	2.1	38	86	0.5	216	1.0
2	542	3.0	550	2.5	39	48	0.3	119	0.5
3	663	3.7	615	2.8	40	300	1.7	555	2.6
4	692	3.9	638	2.9	41	45	0.3	56	0.3
5	510	2.9	536	2.5	42	82	0.5	95	0.4
6	754	4.2	743	3.4	43	59	0.3	80	0.4
7	794	4.4	737	3.4	44	49	0.3	59	0.3
8	814	4.6	751	3.5	45	227	1.3	290	1.3
9	579	3.2	593	2.7	46	60	0.3	81	0.4
10	738	4.1	668	3.1	47	57	0.3	112	0.5
11	493	2.8	502	2.3	48	93	0.5	157	0.7
12	705	3.9	686	3.2	49	36	0.2	113	0.5
13	511	2.9	709	3.3	50	363	2.0	312	1.4
14	576	3.2	527	2.4	51	54	0.3	102	0.5
15	526	2.9	457	2.1	52	83	0.5	150	0.7
16	469	2.6	450	2.1	53	75	0.4	102	0.5
17	424	2.4	344	1.6	54	73	0.4	85	0.4
18	487	2.7	600	2.8	55	233	1.3	307	1.4
19	166	0.9	285	1.3	56	68	0.4	98	0.5
20	329	1.8	592	2.7	57	58	0.3	64	0.3
21	109	0.6	169	0.8	58	89	0.5	110	0.5
22	118	0.7	290	1.3	59	31	0.2	37	0.2
23	113	0.6	233	1.1	60	407	2.3	512	2.4
24	81	0.5	230	1.1	61	23	0.1	28	0.1
25	156	0.9	504	2.3	62	73	0.4	50	0.2
26	117	0.7	268	1.2	63	71	0.4	48	0.2
27	76	0.4	281	1.3	64	31	0.2	46	0.2
28	126	0.7	344	1.6	65	226	1.3	233	1.1
29	52	0.3	219	1.0	66	42	0.2	31	0.1
30	269	1.5	649	3.0	67	63	0.4	38	0.2
31	37	0.2	82	0.4	68	59	0.3	64	0.3
32	95	0.5	197	0.9	69	27	0.1	21	0.1
33	59	0.3	113	0.5	70+	903	5.1	791	3.6
34	43	0.2	89	0.4	Don't know/				
35	176	1.0	433	2.0	Missing	13	0.1	8	0.0
36	56	0.3	147	0.7					
					Total	17,865	100.0	21,703	100.0

Table C.2 Age distribution of eligible and interviewed women

Distribution of the de facto household population of women age 10-54, and of interviewed women age 15-49, and percentage of eligible women who were interviewed (weighted), by five-year age groups, Eritrea 2002

Age group	Household population of women age 10-54	Interviewed women age 15-49		Percentage of eligible women interviewed
		Number	Percent	
10-14	3,092	na	na	na
15-19	2,136	1,997	22.8	93.5
20-24	1,515	1,444	16.5	95.4
25-29	1,618	1,569	17.9	97.0
30-34	1,130	1,098	12.5	97.2
25-39	1,105	1,083	12.4	98.0
40-44	845	826	9.4	97.8
45-49	753	736	8.4	97.8
50-54	750	na	na	na
15-49	9,100	8,753	100.0	96.2

Note: The de facto population includes all residents and nonresidents who stayed in the household the night before interview. Weights for both household population of women and interviewed women are household weights. Age is based on the household schedule.
na = Not applicable

Table C.3 Completeness of reporting

Percentage of observations with missing information for selected demographic and health questions, Eritrea 2002

Subject	Reference group	Percentage missing information	Number of cases
Birth Date	Births in the past 15 years		
Month only		6.56	17,975
Month and year		0.14	17,975
Age at death	Dead children born in the past 15 years	0.77	1,996
Age/date at first union[1]	Ever-married women age 15-49	0.99	6,710
Respondent's education	All women age 15-49	0.02	8,754
Diarrhea in last 2 weeks	Living children age 0-59 months	0.44	5,748
Anthropometry	Living children age 0-59 months		
Height		4.34	5,994
Weight		2.51	5,994
Height or weight		4.41	5,994

[1] Both year and age missing

Table C.4 Births by calendar years

Distribution of births by calendar years for living, dead, and all children, according to completeness of birth dates, sex ratio at birth, and ratio of births by calendar year (weighted), Eritrea 2002

	Number of births			Percentage with complete birth date[1]			Sex ratio at birth[2]			Calendar year ratio[3]		
Year	Living	Dead	Total	Living	Dead	Total	Living	Dead	Total	Living	Dead	Total
2002	520	18	538	100.0	91.2	99.7	96.7	198.5	99.0	na	na	na
2001	1,166	68	1,233	99.2	86.3	98.5	106.1	250.4	110.8	na	na	na
2000	1,064	74	1,138	98.9	88.5	98.2	97.5	93.1	97.2	96.7	106.2	97.3
1999	1,034	72	1,106	98.8	81.6	97.7	106.6	116.0	107.2	87.5	81.1	87.1
1998	1,299	104	1,403	98.4	85.7	97.5	115.2	156.6	117.8	120.2	110.9	119.5
1997	1,127	115	1,242	97.1	90.2	96.5	99.6	102.8	99.9	89.6	77.1	88.3
1996	1,216	195	1,411	95.4	84.0	93.8	100.2	148.7	105.7	100.8	149.2	105.6
1995	1,284	146	1,430	94.5	77.5	92.7	112.8	101.9	111.6	99.8	78.4	97.1
1994	1,358	178	1,536	92.7	79.6	91.2	102.0	121.9	104.2	113.8	113.7	113.8
1993	1,102	167	1,269	91.5	81.5	90.2	110.4	132.9	113.1	91.9	99.1	92.8
1993-1997	5,082	337	5,419	98.9	85.9	98.1	105.5	144.0	107.6	na	na	na
1988-1992	6,087	802	6,888	94.2	82.2	92.8	104.9	122.9	106.8	na	na	na
1983-1987	4,427	783	5,209	91.3	79.8	89.6	98.8	121.5	101.9	na	na	na
< 1983	2,627	596	3,224	88.8	79.5	87.0	108.5	118.8	110.3	na	na	na
All	18,223	2,518	20,741	94.0	81.3	92.5	104.0	124.1	106.3	na	na	na

na= Not applicable
[1]Both year and month of birth given
[2]$(B_m/B_f)*100$, where B_m and B_f are the numbers of male and female births, respectively
[3]$[2B_x/(B_{x-1}+B_{x+1})]*100$, where B_x is the number births in calendar year x

Table C.5 Reporting of age at death in days

Distribution of reported deaths under one month of age by age at death in days and the percentage of neonatal deaths reported to occur at ages 0-6 days, for five-year periods of birth preceding the survey, Eritrea 2002

Age at death (days)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
<1	31	42	23	10	105
1	33	62	34	13	141
2	14	11	8	11	44
3	16	35	16	15	82
4	6	3	2	4	15
5	7	12	5	5	29
6	3	3	4	2	12
7	9	15	20	13	57
8	3	4	4	1	12
9	1	2	3	0	6
10	3	4	5	4	17
11	1	2	0	0	3
12	1	2	2	3	8
14	10	8	4	2	23
15	6	9	6	2	23
18	0	0	2	0	2
20	0	5	2	0	6
21	3	10	3	3	19
22	1	0	0	0	1
23	0	0	1	0	1
25	0	0	1	4	5
28	0	2	0	0	2
30	1	0	3	1	5
31+	0	2	2	6	10
Total 0-30	148	230	147	93	617
Percent early neonatal[1]	74	73	62	64	69

[1] 0-6 days/0-30 days

Table C.6 Reporting of age at death in months

Distribution of reported deaths under two years of age by age at death in months and the percentage of infant deaths reported to occur at less than one month of age, for five-year periods of birth preceding the survey, Eritrea 2002

Age at death (months)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
< 1 month[1]	148	230	147	93	617
1	34	49	38	22	143
2	23	19	9	19	69
3	6	26	27	13	73
4	11	12	27	10	59
5	3	8	13	4	28
6	18	25	27	18	88
7	3	19	12	11	45
8	5	21	10	12	48
9	12	13	16	7	49
10	10	6	9	11	36
11	5	12	11	2	30
12	13	26	24	21	84
13	3	5	8	5	21
14	4	6	5	6	20
15	2	9	5	1	16
16	0	2	5	0	7
17	2	1	1	0	3
18	11	23	22	20	76
19	0	0	2	2	3
20	5	4	3	0	13
21	1	2	1	2	6
22	1	3	4	0	9
23	2	4	5	2	13
24+	2	1	3	1	7
1 year	27	47	44	33	151
Total 0-11	277	440	344	224	1,285
Percent neonatal[2]	53	52	43	41	48

[1] Includes deaths under one month reported in days
[2] Under one month/under one year

SURVEY PERSONNEL

APPENDIX D

NATIONAL STATISTICS AND EVALUATION OFFICE (NSEO)

MANAGEMENT

Georgies Teclemichael, Head, National Statistics and Evaluation Office
Ainom Birhane, Deputy Head
Gebrekristos Ogbamichael, Head, Administration and Finance

TECHNICAL STAFF

Woldeyesus Elisa, Senior Statistician and Demographer, Project Director
Hagos Ahmed, Statistician and Demographer, Project Technical Director
Yacob Yishak, Master in Public Health
Gebreselassie Mebrahtu, Sampling Expert
Yemane Yohennes, Cartography Expert

FIELD COORDINATORS

Haile Tewolde, Economist, Zoba Technical Coordinator
Mengesteab Beleste, Statistician, Zoba Administrative Coordinator
Omega Bokre, Statistician, Zoba Technical Coordinator
Tirhas Tsegay, Statistician, Zoba Technical Coordinator
Tecleab Yirgalem, Statistician, Zoba Administrative Coordinator
Medhane Asrat, Statistician, Zoba Administrative Coordinator
Mebrat Abreha, Statistician, Zoba Technical Coordinator
Amleset Amenay, Statistician, Zoba Technical Coordinator
Samson Hadish, Statistician, Zoba Technical Coordinator
Teclom Tsegay, Zoba Administrative Coordinator
Taeme Araya, Zoba Administrative Coordinator

DATA PROCESSING STAFF

Hurui Habtai, Computer Programmer
Weldeselasie Hidray, Supervisor
Medhane Gebrengus, Supervisor

AUTHORS

Chapter 1: Introduction	Gebremariam Woldemicael
Chapter 2: Characteristics of Households and Household Members	Omega Bokre and Sushil Kumar
Chapter 3: Women Characteristics and Status	Hagos Ahmed and Anne Cross
Chapter 4: Fertility	Hagos Ahmed
Chapter 5: Fertility Regulation	Sushil Kumar
Chapter 6: Proximate Determinant of Fertility	Yacob Yisak
Chapter 7: Fertility Preferences	Sushil Kumar
Chapter 8: Infant and Child Mortality	Woldeyesus Elisa
Chapter 9: Maternal and Child Health	Michael Mehari, Shashu Gebraselasie, and Sushil Kumar
Chapter 10: Infant Feeding and Nutrition	Salma Mohamed

Chapter 11: AIDS and Other Sexually Transmitted Infections	Andeberhan Tesfazion
Chapter 12: Female Circumcision	Azenegash Ghebreselasie, Hailemariam Andemariam, and Sushil Kumar

TRAINERS

Woldeyesus Elisa	Salma Mohamed
Hagos Ahmed	Samson Hadish
Woldeselasie Hidray	Tekleab Yirgealem
Abdulhamid Musanur	Tesfalul Andebrhan
Brhane Yohannes	Tirhas Tesgay
Michael Tekle	Yemane Kidane
Omega Bokre	Yisahk Zekarias
Almaz Seyum	Shashu Gebreselasie

TRANSLATORS: TIGRINA MANUAL AND QUESTIONNAIRE

Abdulhamid Musanur	Omega Bokre
Daniel Gebreyohanes	Tekleab Yirgealem
Gebru Andom	Tesfalul Andebrhan
Medhane Asrat	Tirhas Tsegay
Michael Tekle	Woldeselasie Hidray
Mulugheta Tekle	

TRANSLATORS: LOCAL LANGUAGE QUESTIONNAIRES

Osman Hamedu	Afar
Sulus Beyen	Bilen
John Abraha	Kunama
Dawed Adem	Nara
Ibrahim Mohammed	Saho
Saleh Mohammud	Tigre

FIELD STAFF

Supervisors

Abadit Estifanos	Mineya Abraham
Alem Fitwi	Rahma Yacob
Alganesh Tesfagaber	Salha Ibrahim
Amal Abdunur	Semira Ahmedin
Elsa Estifanos	Senait Haile
Hiriti Mebrahtu	Senbetu Ejidio
Legeset Fitseha	Tirhas B'edemariam

Field Editors

Almaz Tekeste	Natalina Pawlo
Awalet Eyob	Nebyat Tekie
Awet Araya	Nitshti Tekle
Dehab Tesfay	Rahwa Mohamed
Ji'mea Sulieman	Resan Ghbrezghier
Kidsti Daniel	Roble Mohamud
Koyba Habteab	Tinsu Aibu

Interviewers

Abdu Yusuf
Adiam Mehari
Amasi Ghebrue
Amuna Mehamed
Angelina Eugenio
Asmeret Asmerom
Azeb Tareke
Azeb Teklemariam
Elsa Salm
Elsa Resom
Fana Indrias
Fatma Edris
Fozia Abdunur
Freweini Habtay
Fyori Tsegay
Genet Zeray
Halima Asmael
Halima Kelifa Ali
Hassan Idris
Hawa Mohamed
Hayat Ebrahim
Hayat Abdela
Haymanot Debesay
Kedija Mahamed
Kedja Abdu
Kibret Tesfa
Lemlem Kibrom
Letehaimanot Gebreab
Letekidan Birhane
Lidya Eyob
Mebrat Weldu
Medhanit Weldegabr
Meriem Ebrahim
Mitsilal Abraham
Natsnet Andemikael
Natsnet Drar
Ne'ima Salh
Nefisa Abdela
Netsanet Butsamlak
Nura Faid
Nuria Sead
Rahel Petros
Rahma Sulman
Rekia Abdella
Rigbe Kibrom
Roman Freselase
Ruta Ameno
Saba Araya
Saba Teklebrhan
Sad'ya Ahmed
Sadiya Musa
Selemawit Estifanos
Semret Tekle
Senait Kiros
Senait Weldegergish
Sewsen Hlaf
Tiakel Tekle
Tigsti Fsahaye
Tigsti Legese
Tsega Zemichal
Tsegereda Abib
Tsehanesh G/nigus
Tsgheweyni Tekie
Yokbit Aron
Zahra Edris
Zebiba Mohammed

LISTING AND MAPPING

Coordinators

Araya Woldegebreal
Taeme Araya
Teklom Tsegay

Supervisors

Medhane Asrat
Gebru Andom
Mulugeta Tekle
Daniel Gebreyohannis
Kiflemariam Hayle
Medhane Yohannis
Yosef Haile
Tedros Tekle
Negasi Girmay
Debesay Tesfay
Mebrahtu Gebremikael

Mappers

Abdella Idris
Abraham Tesfatsion
Amanuel Isaya
Asmelash Yemane
Awet Kidane
Bereket Gebreigzabiher
Daniel Kiros
Destalem Berhe
Efrem Gebray
Fesseha Yohannes
Henok Gebrehiwot
Iyasu Habte
Luwam Tiumizgi
Medhane Gebrenegus
Mekonnen Berhane
Hassen Idris
Yonas Berhane
Ristom Amlesom
Yasin Ali
Samson Gayim
Abdu Yusuf

Listers

Abdulkadir Hamedzein
Abraham Gebrezgi
Berhane Gebrehanis
Efrem Tesfay
Goytom Tsegay
Habtom Makele Gerezgiher
Hibret Estifanos
Huriya Noray
Jemal Mehamednur
Layde Anselmo Gini Bakit
Merhawi Tsegai
Nejat Ahmed Ibrahim
Romadan Yusuf
Selemawit Melake
Taame Negash
Tsegay Teklehaymanot
Yohannis Girmatsio
Mohammedhagos Ata
Zeynab Umar

DATA PROCESSING

Computer Programmer

Hurui Habtai

Supervisor

Weldeselasie Hidray
Medhane Gebrengus

Questionnaire Administrator

Aster Gebremariam

Data Entry Operators

Akberet Gebremariam
Asmait Negash
Fithawit T/Michael
Fiyori Gebremichael
Freweigni Gebremariam
Ghenet Keleta
Lydia Girmay
Natsenet Betsuamlak
Selamawit Kurban
Selamawit T/Berhan
Senait Tesfazghi
Simret Mesfun
Tereza Ferdinando
Timnit G/Michael

DRIVERS

Abdelwasie Ata	Mebrahtu Seyum
Abduselam Mohamednur	Mehari Beyene
Abreham Fesehatsion	Michael Brhane
Afewerki Tekleab	Mohamed Ali
Fesehaye Gebremariam	Okbay Zeweldi
Fitwi Araya	Pawlos Weldegebriel
Hagos Abdelwahab	Samuel Afewerki
Johar Mohamednur	Seltene Gaym
Kiflom Tesfatsion	Tesfalem Tekle

SUPPORT STAFF

Tecleab Ogbatsion	Accountant
Freweigni Alemseged	Cashier
Andemariam Woldeselasie	Purchaser
Aster Estifanos	Secretary
Nardos Teklegiorgis	Secretary

ORC MACRO

Sushil Kumar, Country Manager
Anne Cross, Regional Coordinator
Ann Way, Vice President
Jeanne Cushing, Senior Data Processing Specialist
Jeanetta Churchill, Data Processing Specialist
Alfredo Aliaga, Senior Sampling Specialist
Daniel Vadnais, Data Dissemination Coordinator
Sidney Moore, Editor
Tulshi Saha, Demographer
Fred Arnold, Vice President
Katherine Senzee, Document Production Specialist
Luis Hernando Ochoa, Regional Coordinator
Kaye Mitchell, Document Production Specialist

QUESTIONNAIRES

APPENDIX **E**

THE STATE OF ERITREA
OFFICE OF THE PRESIDENT
NATIONAL STATISTICS AND EVALUATION OFFICE

ERITREA DEMOGRAPHIC AND HEALTH SURVEY
HOUSEHOLD SCHEDULE

ALL INFORMATION COLLECTED IS CONFIDENTIAL AND IS ONLY FOR STATISTICAL USE

IDENTIFICATION

ZOBA .....

SUB-ZOBA .....

VILLAGE/TOWN NAME_____
[ASMARA=1, OTHER TOWN =2, RURAL = 3].....

CLUSTER NUMBER .....

HOUSEHOLD NUMBER .....

NAME OF HOUSEHOLD HEAD_____

INTERVIEWER VISITS

	1	2	3	FINAL VISIT
DATE	____/_____/_____ DD MM YYYY	____/_____/_____ DD MM YYYY	____/_____/_____ DD MM YYYY	DAY .....
				MONTH.....
TEAM				YEAR.....
INTERVIEWER'S NAME	_____	_____	_____	TEAM .....
				NAME.....
RESULT **SEE * BELOW**				RESULT .....
NEXT VISIT: DATE	____/_____/_____ DD MM YYYY	____/_____/_____ DD MM YYYY		TOTAL NO. OF VISITS
TIME	_____	_____		

* RESULT CODES

1=COMPLETED
2=NO HOUSEHOLD MEMBER/COMPETENT RESPONDENT AT HOME AT TIME OF VISIT
3=ENTIRE HOUSEHOLD ABSENT FOR EXT. PERIOD
4=POSTPONED
5=REFUSED
6=DWELLING VACANT OR ADDRESS NOT A DWELLING
7=DWELLING DESTROYED
8=DWELLING NOT FOUND
9=OTHER_____ (SPECIFY)

LANGUAGE:**SEE ** BELOW**

QUESTIONNAIRE
LANGUAGE OF INTERVIEW
NATIVE LANGUAGE OF THE RESPONDENT

** LANGUAGE CODES:

01=AFAR 02= BILEN 03= HEDARIB (Tobedawi) 04= KUNAMA 05= NARA
06= RASHAIDA (Arabic) 07= SAHO 08= TIGRE 09= TIGRIGNA 10= OTHER

TRANSLATOR USED (1= NOT AT ALL, 2= SOMETIMES, 3= ALL THE TIME)……..…….

TOTAL PERSONS IN THE HOUSEHOLD

TOTAL ELIGIBLE WOMEN

LINE NUMBER OF RESPONDENT TO HOUSEHOLD SCHEDULE

SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY
NAME_____	NAME_____		
DATE____/_____/_____ DD MM YYYY	DATE____/_____/_____ DD MM YYYY		

HOUSEHOLD SCHEDULE

Now we would like some information about the people who usually live in your household or who are staying with you now

LINE NO.	USUAL RESIDENTS AND VISTORS	SEX	RELATION TO HEAD OF HOUSE-HOLD*	RESIDENCE		AGE	EDUCATION			
							IF AGE 6 YEARS OR OLDER			
	Please give me the name of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household.	Is (NAME) male or female?	What is the relation-ship of (NAME) to the head of the household ? SEE * BELOW	Does (NAME) usually live here?	Did (NAME) Stay here last night?	How old is (NAME)?	Can (NAME) read and write in any language without difficulty?	Has (NAME) ever been to school? IF NO GO TO 12	IF ATTENDED SCHOOL What is the highest level of school (NAME) attended? What is the highest grade (NAME) completed at that level? SEE ****BELOW**	IF AGE LESS THAN 25 YEARS Is (NAME) still in school?
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
01		**M F** **1 2**		YES NO 1 2	YES NO 1 2	IN YEARS	YES NO 1 2	YES NO 1 2	LEVEL GRADE	YES NO 1 2
02		**1 2**		1 2	1 2		1 2	1 2		1 2
03		**1 2**		1 2	1 2		1 2	1 2		1 2
04		**1 2**		1 2	1 2		1 2	1 2		1 2
05		**1 2**		1 2	1 2		1 2	1 2		1 2
06		**1 2**		1 2	1 2		1 2	1 2		1 2
07		**1 2**		1 2	1 2		1 2	1 2		1 2
08		**1 2**		1 2	1 2		1 2	1 2		1 2
09		**1 2**		1 2	1 2		1 2	1 2		1 2
10		**1 2**		1 2	1 2		1 2	1 2		1 2
11		**1 2**		1 2	1 2		1 2	1 2		1 2
12		**1 2**		1 2	1 2		1 2	1 2		1 2
13		**1 2**		1 2	1 2		1 2	1 2		1 2
14		**1 2**		1 2	1 2		1 2	1 2		1 2

TICK HERE IF CONTINUATION SHEET USED ☐

Just to make sure that I have a complete listing:

1. Are there any other persons such as small children or infants that we have not listed?…….YES ☐ → ENTER EACH IN TABLE NO ☐
2. In addition, are there any other people who may not be members of your family such as domestic servants , lodgers or friends who usually live here?……..…YES ☐ → ENTER EACH IN TABLE NO ☐
3. Are there any guests or temporary visitors staying here, or any one else who slept here last night that have not been listed?……..YES ☐ → ENTER EACH IN TABLE NO ☐

PARENTAL SURVIVORSHIP AND RESIDENCE FOR PERSONS LESS THAN 15 YEARS OLD These questions refer to the biological parents of the child. Record "00" if parent not member of the household.				IF AGE >=15	ASK FOR THOSE AGED 10 YEARS OR MORE				ELIGIBILITY	
Is (NAME)'s natural mother alive?	IF ALIVE Does (NAME)'s natural mother live in this household? If YES, what is her name? RECORD MOTHER'S LINE NUMBER	Is (NAME)'s natural father alive?	IF ALIVE Does (NAME)'s natural father live in this household? If YES, what is his name? RECORD FATHER'S LINE NUMBER	What is (NAME)'s current marital status? **SEE *** BELOW**	Did (NAME) work during last month?	IF YES TO QUESTION 15B:ASK QUESTIONS 15C AND 15D			CIRCLE LINE NUMBER OF ALL WOMEN AGED 15-49	CIRCLE LINE NUMBER OF ALL CHILDREN UNDER AGE 6
						Is (NAME) paid in cash or kind for the work he/she does? 1=CASH 2=KIND 3=BOTH 4=NOT PAID	What is the main work that (NAME) does?	OCCU PA-TION CODE		
(12)	(13)	(14)	(15)	(15A)	(15B)	(15C)	(15D)	(15E)	(16)	(17)
YES NO DK 1 2 3		YES NO DK 1 2 3			YES NO 1 2	1 2 3 4			01	01
1 2 3		1 2 3			1 2	1 2 3 4			02	02
1 2 3		1 2 3			1 2	1 2 3 4			03	03
1 2 3		1 2 3			1 2	1 2 3 4			04	04
1 2 3		1 2 3			1 2	1 2 3 4			05	05
1 2 3		1 2 3			1 2	1 2 3 4			06	06
1 2 3		1 2 3			1 2	1 2 3 4			07	07
1 2 3		1 2 3			1 2	1 2 3 4			08	08
1 2 3		1 2 3			1 2	1 2 3 4			09	09
1 2 3		1 2 3			1 2	1 2 3 4			10	10
1 2 3		1 2 3			1 2	1 2 3 4			11	11
1 2 3		1 2 3			1 2	1 2 3 4			12	12
1 2 3		1 2 3			1 2	1 2 3 4			13	13
1 2 3		1 2 3			1 2	1 2 3 4			14	14

*** CODES FOR Q.4**

RELATIONSHIP TO HEAD OF HOUSEHOLD:

01=Head
02=Wife or husband
03=Son or daughter
04=Son in-law or daughter in-law
05=Grand child
06=Parent
07=Parent-in-law
08=Brother or sister
09=Co-wife
10=Other relatives
11= Adopted/foster/step child
12= Not related
98=Don't know

**** CODES FOR Q.10**

EDUCATIONAL LEVEL:

1=Primary/elementary
2=Middle
3=Secondary
4=Higher
8=Don't know

EDUCATIONAL GRADE:

00=Less than one year completed
98=Don't know

*****CODES FOR Q.15A**

MARITAL STATUS:

1=Married
2=Living together
3=Widowed
4=Divorced
5=Separated
6=Single /never married

THE QUESTIONNAIRE HAS SPACES TO RECORD UP TO 14 HOUSEHOLD MEMBERS, IF MORE ADD ANOTHER QUESTIONNAIRE.

17A During the past two years, that is 24 months, has any of the usual members of this household died?

YES ☐ NO ☐ → SKIP TO 18

Now we would like to have some information about all of the deaths that occurred in this household to usual residents during the past 24 months.

IF MORE THAN FOUR DEATHS ADD NEW HOUSEHOLD QUESTIONNAIRE

Sr. No.	NAME OF PERSON	SEX	AGE AT DEATH	DATE OF DEATH	
				MONTH	YEAR
	Please give me the names of all the persons who were usual residents of this household and died during the past 24 months, that is, since 2000 to the to the month of interview.	Was (NAME) Male or Female?	How old was (NAME) when he/she died? RECORD IN COMPLETED YEARS	In what month did (NAME) die? PROBE: During what season?	In what year did (NAME) die? PROBE: This year or last year?
	(17B)	(17C)	(17D)	(17E)	(17F)
1		M F 1 2	AGE ☐☐	MONTH ☐☐	YEAR ☐☐☐☐
2		1 2	☐☐	☐☐	☐☐☐☐
3		1 2	☐☐	☐☐	☐☐☐☐
4		1 2	☐☐	☐☐	☐☐☐☐
	TOTAL DEATHS IN THE HOUSEHOLD	☐			

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
18	Are there any members in this household who are displaced because of the recent war between Eritrea and Ethiopia? IF YES, how many? IF NONE RECORD "00".	NUMBER OF PERSONS DISPLACED ..... ☐☐	
19	What is the main source of drinking water for members of your household?	PIPED WATER PIPED IN TO RESIDENCE /YARD /PLOT ..... 11 PUBLIC TAP ..... 12 PROTECTED WELL WATER WELL IN RESIDENCE/YARD/PLOT ..... 21 PUBLIC WELL ..... 22 UN PROTECTED WELL WATER WELL IN RESIDENCE/YARD/PLOT ..... 31 PUBLIC WELL ..... 32 SURFACE WATER SPRING ..... 41 RIVER/STREAM ..... 42 POND/LAKE ..... 43 DAM ..... 44 TANKER TRUCK ..... 61 OTHER _____ 96 (SPECIFY)	→ 21 → 21 → 21

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
20	How long does it take to go there, get water, and come back? IF LESS THAN ONE MINUTE CIECLE '996'.	MINUTES ..... ☐☐☐ ON PREMISES 996	→ 21
20A	How long is the normal wait to take your turn to get water at the (NAME OF THE WATER SOURCE)?	MINUTES ..... ☐☐☐ NO WAIT 996	
20B	Who mainly fetch water for the household?	MALE ..... 1 FEMALE 2	
21	What kind of toilet facility does your household have?	FLUSH TOILET OWN FLUSH TOILET ..... 11 SHARED FLUSH TOILET ..... 12 PIT TOILET /LATRINE TRADITIONAL PIT TOILET ..... 21 VENTILATED IMPROVED PIT (VIP) LATRINE ..... 22 NO FACILITY /BUSH/FIELD ..... 31 OTHER _____ 96 (SPECIFY)	
22	Does your household have:	YES NO	
	Electricity?	ELECTRICITY 1 2	
	A radio?	RADIO 1 2	
	A television?	TELEVISION 1 2	
	A telephone?	TELEPHONE 1 2	
	A refrigerator?	REFRIGERATOR 1 2	
22A	Does your household:	YES NO	
	Own the house it is living in?	OWN HOUSE 1 2	
	Have cropland?	CROPLAND 1 2	
	Have cattle or camels?	CATTLE/CAMEL 1 2	
	Have horse or mule or donkey?	HORSE/MULE/DONKEY 1 2	
	Have sheep or goats?	SHEEP/GOATS 1 2	
	Grow cash crops?	CASH CROPS 1 2	
23A	How many rooms excluding kitchen and toilet in this dwelling are for the exclusive use for the members of this household?	NUMBER OF ROOMS ..... ☐☐	
23B	How many rooms in your household are used for sleeping?	NUMBER OF ROOMS ..... ☐☐	
23C	Are any farm animals kept within the living area of the household?	YES ..... 1 NO 2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
24	MAIN MATERIAL OF THE FLOOR RECORD OBESERVATION.	NATURAL FLOOR EARTH /SAND ..... 11 DUNG ..... 12 RUDIMENTARY FLOOR WOOD PLANKS ..... 21 PALM /BAMBOO ..... 22 FINISHED FLOOR PARQUET OR POLISHED WOOD ..... 31 VINIL OR ASPHALT STRIPS ..... 32 CERAMIC TILES ..... 33 CEMENT ..... 34 CARPET ..... 35 OTHER _____ 96 (SPECIFY)	
25	Does any member of your household own:	YES NO	
	A donkey cart?	DONKEY CART 1 2	
	A bicycle?	BICYCLE 1 2	
	A motorcycle?	MOTORCYCLE 1 2	
	A car or truck?	CAR\TRUCK 1 2	
25A	What type of fuel dose your household mainly use for cooking?	ELECTRICITY ..... 01 LPG/NATURAL GAS ..... 02 BIOGAS ..... 03 KEROSINE ..... 04 COAL, LIGINITE ..... 05 CHARCOAL ..... 06 FIREWOOD, STRAW ..... 07 ANIMAL DUNG CAKES ..... 08 OTHERS _____ 96 (SPECIFY)	
26	ASK RESPONDENT FOR A TEASPOONFUL OF SALT THEY USUALLY USE. TEST FOR IODINE **RECORD PPM (PARTS PER MILLION)**	0 PPM (NO IODINE) ..... 1 7 PPM ..... 2 15 PPM ..... 3 30 PPM ..... 4 NO SALT IN THE HH ..... 5 SALT NOT TESTED _____ 6 (SPECIFY REASONS)	
27	Does your household have any mosquito nets that can be used while sleeping?	YES ..... 1 NO 2	→ 28A
28	How many mosquito nets are there in this household?	MOSQUITO NETS ..... ☐☐ DON'T KNOW 98	

WEIGHT AND HEIGHT MEASUREMENT

28A. CHECK COLUMNS (16) AND (17): RECORD THE LINE NUMBER, NAME AND AGE OF ALL WOMEN AGE 15-49 AND ALL CHILDREN UNDER AGE 6.

WOMEN 15-49				WEIGHT AND HEIGHT MEASUREMENT OF WOMEN 15-49			
LINE NO. FROM COL. (16)	NAME FROM COL. (2)	AGE FROM COL. (7)	What is (NAME)'s date of birth?	WEIGHT (KILOGRAMS)	HEIGHT (CENTIMETERS)	MEASURED LYING DOWN OR STANDING UP	RESULT 1= MEASURED 2= NOT PRESENT 3= REFUSED 6= OTHER
(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)
		YEARS		.	.		
				.	.		
				.	.		
				.	.		
				.	.		

CHILDREN UNDER AGE 6				WEIGHT AND HEIGHT MEASUREMENT OF CHILDREN BORN IN 1997 OR LATER			
LINE NO. FROM COL. (17)	NAME FROM COL. (2)	AGE FROM COL. (7)	What is (NAME)'s date of birth?	WEIGHT (KILOGRAMS)	HEIGHT (CENTIMETERS)	HEIGHT MEASURED LYING DOWN OR STANDING UP	RESULT 1= MEASURED 2=NOT PRESENT 3= REFUSED 6= OTHER
		YEARS	DAY MONTH YEAR				
				0 .	.	LYING 1 STAND 2	
				0 .	.	1 2	
				0 .	.	1 2	
				0 .	.	1 2	
				0 .	.	1 2	
				0 .	.	1 2	

TICK HERE IF CONTINUATION SHEET USED ☐

THANK YOU! **THANK YOU!!**

THANK YOU!!!

INTERVIEWER'S OBSERVATIONS

TO BE FILLED IN AFTER COMPLETING INTERVIEW

COMMENTS ABOUT RESPONDENT:

COMMENTS ON SPECIFIC QUESTIONS:

ANY OTHER COMMENTS:

SUPERVISOR'S OBSERVATIONS

NAME OF THE SUPERVISOR:_____DATE: _____/_____/_____

EDITOR'S OBSERVATIONS

NAME OF EDITOR:_____DATE: _____/_____/_____

THE STATE OF ERITREA
OFFICE OF THE PRESIDENT
NATIONAL STATISTICS AND EVALUATION OFFICE

ERITREA DEMOGRAPHIC AND HEALTH SURVEY
WOMEN'S QUESTIONNAIRE

ALL INFORMATION COLLECTED IS CONFIDENTIAL AND IS ONLY FOR STATISTICAL USE

IDENTIFICATION

ZOBA .....

SUB-ZOBA .....

VILLAGE/TOWN NAME _____
[ASMARA=1, OTHER TOWN =2, RURAL = 3]

CLUSTER NUMBER .....

HOUSEHOLD NUMBER .....

NAME OF HOUSEHOLD HEAD _____

NAME AND LINE NUMBER OF WOMAN _____

INTERVIEWER VISITS

	1	2	3	FINAL VISIT
DATE	____/____/____ DD MM YYYY	____/____/____ DD MM YYYY	____/____/____ DD MM YYYY	DAY MONTH YEAR
TEAM				TEAM
INTERVIEWER'S NAME	_____	_____	_____	NAME
RESULT **SEE* BELOW**				RESULT
NEXT VISIT: DATE	____/____/____ DD MM YYYY	____/____/____ DD MM YYYY		TOTAL NO. OF VISITS
TIME	_____	_____		

*** RESULT CODES**

1=COMPLETED	4= REFUSED	7=OTHER_____
2=NOT AT HOME	5=PARTIALLY COMPLETED	(SPECIFY)
3=POSTPONED	6=INCAPACITATED	

LANGUAGE: **SEE ** BELOW**

QUESTIONNAIRE ☐☐ LANGUAGE OF INTERVIEW ☐☐ NATIVE LANGUAGE OF RESPONDENT ☐☐

** LANGUAGE CODES:

01=AFAR	02= BILEN	03= HEDARIB (Tobedawi)	04= KUNAMA	05= NARA
06= RASHAIDA (Arabic)	07= SAHO	08= TIGRE	09= TIGRIGNA	10= OTHER _____

TRANSLATOR USED (1= NOT AT ALL, 2= SOMETIMES, 3= ALL THE TIME)…… ☐

SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY
NAME_____	NAME_____		
DATE____/_____/_____ DD MM YYYY ☐☐	DATE____/_____/_____ DD MM YYYY ☐☐	☐☐	☐☐

SECTION 1. RESPONDENT'S BACKGROUND

INTRODUCTION

Hello. My name is _____ and I am working with the National Statistics and Evaluation Office. We are conducting a national survey about the health of women and children. We would very much appreciate your participation in this survey. I would like to ask you about your health (and the health of your children). This information will help the government to plan health services. The questionnaire usually takes between 20 and 45 minutes to complete. Whatever information you provide will be kept strictly confidential and will not be shown to other persons.

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME.	HOUR ..... ☐☐ MINUTES ..... ☐☐	
102	First I would like to ask some questions about you and your household. For most of the time until you were 12 years old, did you live in a city, in a town, or in a village?	CITY ..... 1 TOWN ..... 2 VILLAGE 3	
102A	What was the name of the village/town/city in which you lived as child? RECORD NAME OF VILLAGE/TOWN AND ZOBA. IF PLACE WAS OUTSIDE OF ERITREA, RECORD NAME OF THE COUNTRY.	VILLAGE/TOWN/CITY _____ ZOBA NAME _____ ☐☐ COUNTRY _____ 96	
103	How long have you been living continuously in (NAME OF CURRENT PLACE OF RESIDENCE)? IF LESS THAN ONE YEAR, RECORD '00' YEARS.	YEARS ..... ☐☐ ALWAYS ..... 95 VISITOR 96	→ 105
104	Just before you moved here, did you live in a city, in a town, or in a village?	CITY ..... 1 TOWN ..... 2 VILLAGE 3	
104A	What was the name of the zoba in which you lived just before you moved here? RECORD NAME OF ZOBA. IF PLACE WAS OUTSIDE OF ERITREA, RECORD NAME OF THE COUNTRY	ZOBA NAME _____ ☐☐ COUNTRY _____ 96	
104B	What was the main reason for your move?	LIBERATION ..... 01 WAR ..... 02 DROUGHT/DEFORESTATION ..... 03 FAMINE ..... 04 EMPLOYMENT ..... 05 EDUCATION ..... 06 SECURITY ..... 07 MARRIAGE ..... 08 OWN/BETTER HOME ..... 09 DEPORTED ..... 10 INTERNAL DISPLACEMENT ..... 11 OTHER _____ 96 (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
105	In what month and year were you born?	MONTH ..... ☐☐ DON'T KNOW MONTH ..... 98 YEAR ..... ☐☐☐☐ DON'T KNOW YEAR 9998	
106	How old were you at your last birthday? COMPARE AND CORRECT 105 AND/OR 106 IF INCONSISTENT.	AGE IN COMPLETED YEARS ..... ☐☐	
107	Have you ever attended school?	YES ..... 1 NO 2	→ 113A
108	What is the highest level of school you attended: Primary, middle, secondary, or higher?	PRIMARY ..... 1 MIDDLE ..... 2 SECONDARY ..... 3 HIGHER 4	
109	What is the highest grade you completed at that level?	GRADE ..... ☐☐	
110	CHECK 106: AGE 24 OR BELOW ☐ → AGE 25 OR ABOVE ☐		→ 113
111	Are you currently attending school?	YES ..... 1 NO 2	→ 113
112	What was the main reason you stopped attending school?	GOT PREGNANT ..... 01 GOT MARRIED ..... 02 TO CARE FOR YOUNGER CHIDREN ..... 03 FAMILY NEEDED HELP ON FARM OR IN BUSINESS ..... 04 COULD NOT PAY SCHOOL FEES ..... 05 NEEDED TO EARN MONEY ..... 06 GRADUATED/HAD ENOUGH SCHOOLING ..... 07 DID NOT PASS ENTRANCE EXAM ..... 08 DID NOT LIKE SCHOOL ..... 09 SCHOOL NOT ACCESSABLE/TOO FAR ..... 10 ILLNESS ..... 11 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	
113	CHECK 108: PRIMARY ☐ → MIDDLE SCHOOL OR ABOVE ☐		→ 114
113A	Are you currently participating in a literacy program or any other program (not including primary school) that involves learning to read or write?	YES ..... 1 NO 2	
113B	Can you read and write in any language without any difficulty?	YES ..... 1 NO 2	→ 115

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
114	Do you usually read a newspaper or magazine at least once a week?	YES ..... 1 NO 2	
115	Do you usually listen to a radio at least once a week?	YES ..... 1 NO 2	
116	Do you usually watch television at least once a week?	YES ..... 1 NO 2	
117	What is your religion?	ORTHODOX ..... 1 CATHOLIC ..... 2 PROTESTANT ..... 3 MUSLIM ..... 4 TRADITIONAL BELIEVER ..... 5 OTHER _____ 6 (SPECIFY)	
118	To which ethnic group do you belong?	AFAR ..... 01 BILEN ..... 02 HEDARIB ..... 03 KUNAMA ..... 04 NARA ..... 05 RASHAIDA ..... 06 SAHO ..... 07 TIGRE ..... 08 TIGRIGNA ..... 09 OTHER _____ 96 (SPECIFY)	

SECTION 2: REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
201	Now I would like to ask about all the births you have had during your life. Have you ever given birth?	YES ..... 1 NO 2	→ 206
202	Do you have any sons or daughters to whom you have given birth who are now living with you?	YES ..... 1 NO 2	→ 204
203	How many sons live with you? And how many daughters live with you? IF NONE, RECORD '00'.	SONS AT HOME ..... ☐☐ DAUGHTERS AT HOME ..... ☐☐	
204	Do you have any sons or daughters to whom you have given birth who are alive but do not live with you?	YES ..... 1 NO 2	→ 206
205	How many sons are alive but do not live with you? And how many daughters are alive but do not live with you? IF NONE, RECORD '00'.	SONS ELSEWHERE..... ☐☐ DAUGHTERS ELSEWHERE ..... ☐☐	
206	Have you ever given birth to a boy or girl who was born alive but later died? IF NO, PROBE: Any baby who cried or showed signs of life but did not survive?	YES ..... 1 NO 2	→ 208
207	How many boys have died? And how many girls have died? IF NONE, RECORD '00'.	BOYS DEAD..... ☐☐ GIRLS DEAD..... ☐☐	
208	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL. IF NONE, RECORD '00'.	TOTAL..... ☐☐	
209	CHECK 208: Just to make sure that I have this right: you have had in TOTAL _____ births during your life. Is that correct? YES ☐ ↓ NO ☐ → PROBE AND CORRECT 201-208 AS NECESSARY.		
210	CHECK 208: ONE OR MORE BIRTHS ☐ ↓ NO BIRTHS ☐ →		225

211 Now I would like to record the names of all your births, whether still alive or not, starting with the first one you had.

RECORD NAMES OF ALL THE BIRTHS IN 212. RECORD TWINS AND TRIPLETS ON SEPARATE LINES.

212 What name was given to your (first/next) baby? (NAME)	213 Were any of these births twins?	214 Is (NAME) a boy or a girl?	215 In what month and year was (NAME) born? PROBE: What is his/her birthday?	216 Is (NAME) still alive?	217 IF ALIVE: How old was (NAME) at his/her last birthday? RECORD AGE IN COM-PLETED YEARS.	218 IF ALIVE: Is (NAME) living with you?	219 IF ALIVE: RECORD HOUSEHOLD LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSEHOLD).	220 IF DEAD: How old was (NAME) when he/she died? IF '1 YR.', PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; OR YEARS.	221 Were there any other live births between [NAME OF PREVIOUS BIRTH] AND [NAME]?
01	SING .. 1 MULT 2	BOY. 1 GIRL 2	MONTH YEAR	YES.... 1 NO ..... 2 → 220	AGE IN YEARS	YES..... 1 NO..... 2	LINE NUMBER (NEXT BIRTH)	DAYS ..... 1 MONTHS . 2 YEARS 3	IF YES, ADD THAT BIRTH TO THE END OF THE BIRTH HISTORY (212)
02	SING .. 1 MULT 2	BOY. 1 GIRL 2	MONTH YEAR	YES.... 1 NO ..... 2 → 220	AGE IN YEARS	YES..... 1 NO..... 2	LINE NUMBER (GO TO 221)	DAYS ..... 1 MONTHS . 2 YEARS 3	YES..... 1 NO 2
03	SING .. 1 MULT 2	BOY. 1 GIRL 2	MONTH YEAR	YES.... 1 NO ..... 2 → 220	AGE IN YEARS	YES..... 1 NO..... 2	LINE NUMBER (GO TO 221)	DAYS ..... 1 MONTHS . 2 YEARS 3	YES..... 1 NO 2
04	SING .. 1 MULT 2	BOY. 1 GIRL 2	MONTH YEAR	YES.... 1 NO ..... 2 → 220	AGE IN YEARS	YES..... 1 NO..... 2	LINE NUMBER (GO TO 221)	DAYS ..... 1 MONTHS . 2 YEARS 3	YES..... 1 NO 2
05	SING .. 1 MULT 2	BOY. 1 GIRL 2	MONTH YEAR	YES.... 1 NO ..... 2 → 220	AGE IN YEARS	YES..... 1 NO..... 2	LINE NUMBER (GO TO 221)	DAYS ..... 1 MONTHS . 2 YEARS 3	YES..... 1 NO 2
06	SING .. 1 MULT 2	BOY. 1 GIRL 2	MONTH YEAR	YES.... 1 NO ..... 2 → 220	AGE IN YEARS	YES..... 1 NO..... 2	LINE NUMBER (GO TO 221)	DAYS ..... 1 MONTHS . 2 YEARS 3	YES..... 1 NO 2
07	SING .. 1 MULT 2	BOY. 1 GIRL 2	MONTH YEAR	YES.... 1 NO ..... 2 → 220	AGE IN YEARS	YES..... 1 NO..... 2	LINE NUMBER (GO TO 221)	DAYS ..... 1 MONTHS . 2 YEARS 3	YES..... 1 NO 2

212 What name was given to your next baby? (NAME)	213 Were any of these births twins?	214 Is (NAME) a boy or a girl?	215 In what month and year was (NAME) born? PROBE: What is his/her birthday?	216 Is (NAME) still alive?	217 IF ALIVE: How old was (NAME) at his/her last birthday? RECORD AGE IN COM-PLETED YEARS.	218 IF ALIVE: Is (NAME) living with you?	219 IF ALIVE RECORD HOUSEHOLD LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSEHOLD).	220 IF DEAD: How old was (NAME) when he/she died? IF '1 YR.', PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; OR YEARS.	221 Were there any other live births between [NAME OF PREVIOUS BIRTH] AND [NAME]?
08	SING .. 1 MULT 2	BOY. 1 GIRL 2	MONTH ☐☐ YEAR ☐☐☐☐	YES.... 1 NO ..... 2 → 220	AGE IN YEARS ☐☐	YES ..... 1 NO..... 2	LINE NUMBER ☐☐ → (GOTO 221)	DAYS ..... 1 ☐☐ MONTHS . 2 ☐☐ YEARS ..... 3 ☐☐	YES..... 1 NO 2
09	SING .. 1 MULT 2	BOY. 1 GIRL 2	MONTH ☐☐ YEAR ☐☐☐☐	YES.... 1 NO ..... 2 → 220	AGE IN YEARS ☐☐	YES ..... 1 NO..... 2	LINE NUMBER ☐☐ → (GOTO 221)	DAYS ..... 1 ☐☐ MONTHS . 2 ☐☐ YEARS ..... 3 ☐☐	YES..... 1 NO 2
10	SING .. 1 MULT 2	BOY. 1 GIRL 2	MONTH ☐☐ YEAR ☐☐☐☐	YES.... 1 NO ..... 2 → 220	AGE IN YEARS ☐☐	YES ..... 1 NO..... 2	LINE NUMBER ☐☐ → (GOTO 221)	DAYS ..... 1 ☐☐ MONTHS . 2 ☐☐ YEARS ..... 3 ☐☐	YES..... 1 NO 2
11	SING .. 1 MULT 2	BOY. 1 GIRL 2	MONTH ☐☐ YEAR ☐☐☐☐	YES.... 1 NO ..... 2 → 220	AGE IN YEARS ☐☐	YES ..... 1 NO..... 2	LINE NUMBER ☐☐ → (GOTO 221)	DAYS ..... 1 ☐☐ MONTHS . 2 ☐☐ YEARS ..... 3 ☐☐	YES..... 1 NO 2
12	SING .. 1 MULT 2	BOY. 1 GIRL 2	MONTH ☐☐ YEAR ☐☐☐☐	YES.... 1 NO ..... 2 → 220	AGE IN YEARS ☐☐	YES ..... 1 NO..... 2	LINE NUMBER ☐☐ → (GOTO 221)	DAYS ..... 1 ☐☐ MONTHS . 2 ☐☐ YEARS ..... 3 ☐☐	YES..... 1 NO 2

222	Have you had any live births since the birth of (NAME OF LAST BIRTH)? IF YES, ADD THAT BIRTH TO THE END OF THE BIRTH HISTORY (212)	YES..... 1 NO 2

223 COMPARE 208 WITH NUMBER OF BIRTHS IN HISTORY ABOVE AND MARK:

NUMBERS ARE SAME ☐ ↓ NUMBERS ARE DIFFERENT ☐ → (PROBE AND RECONCILE)

CHECK: FOR EACH BIRTH: YEAR OF BIRTH IS RECORDED ..... ☐

FOR EACH LIVING CHILD: CURRENT AGE IS RECORDED ..... ☐

FOR EACH DEAD CHILD: AGE AT DEATH IS RECORDED ..... ☐

FOR AGE AT DEATH 12 MONTHS OR 1 YEAR: PROBED TO DETERMINE EXACT NUMBER OF MONTHS ..... ☐

224 CHECK 215 AND ENTER THE NUMBER OF BIRTHS IN 1997 OR LATER.
IF NONE, RECORD "0". ☐

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
225	Have you ever had a pregnancy that miscarried, was aborted, or ended in a stillbirth?	YES ..... 1 NO ..... 2 → 226	
225A	When did the last such pregnancy end?	MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	
225B	CHECK 225A: LAST PREGNANCY ENDED IN 1997 OR LATER ☐ ↓ LAST PEGNANCY ENDED BEFORE 1997 ☐ → 226		
225C	How many months pregnant were you when the last such pregnancy ended? RECORD NUMBER OF COMPLETED MONTHS	MONTHS ..... ☐☐	
226	Are you pregnant now?	YES ..... 1 NO ..... 2 UNSURE ..... 8 → 237	
227	How many months pregnant are you? RECORD NUMBER OF COMPLETED MONTHS.	NUMBER OF MONTHS ..... ☐☐	
228	At the time you became pregnant did you want to become pregnant <u>then</u>, did you want to wait until <u>later</u>, or did you <u>not want</u> to have any (more) children at all?	THEN ..... 1 LATER ..... 2 NOT AT ALL 3	
237	When did your last menstrual period start? _____ (DATE, IF GIVEN)	DAYS AGO ..... 1 ☐☐ WEEKS AGO ..... 2 ☐☐ MONTHS AGO ..... 3 ☐☐ YEARS AGO ..... 4 ☐☐ IN MENOPAUSE/ HAS HAD HYSTERECTOMY ..... 994 BEFORE LAST BIRTH ..... 995 NEVER MENSTRUATED 996	
238	From one menstrual period to the next, are there certain days when a woman is more likely to become pregnant if she has sexual relations?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8 → 301	
239	Is this time just before her period begins, during her period, right after her period has ended, or halfway between two periods?	JUST BEFORE HER PERIOD BEGINS ..... 1 DURING HER PERIOD ..... 2 RIGHT AFTER HER PERIOD HAS ENDED ..... 3 HALFWAY BETWEEN TWO PERIODS ..... 4 OTHER_____ 6 (SPECIFY) DON'T KNOW 8	

SECTION 3. CONTRACEPTION

Now I would like to talk about family planning - the various ways or methods that a couple can use to delay or avoid a pregnancy.
CIRCLE CODE 1 IN 301 FOR EACH METHOD MENTIONED SPONTANEOUSLY. THEN PROCEED DOWN COLUMN 301, READING THE NAME AND DESCRIPTION OF EACH METHOD NOT MENTIONED SPONTANEOUSLY. CIRCLE CODE 1 IF METHOD IS RECOGNIZED, AND CODE 2 IF NOT RECOGNIZED. THEN, FOR EACH METHOD WITH CODE 1 CIRCLED IN 301 ASK 302.

301	Which ways or methods have you heard about? FOR METHODS NOT MENTIONED SPONTANEOUSLY, ASK Have you ever heard of (METHOD)?		302 Have you ever used (METHOD)?
01	FEMALE STERILIZATION Women can have an operation to avoid having any (more) children.	YES ..... 1 NO ..... 2 →	Have you ever had an operation to avoid having any (more) children? YES ..... 1 NO 2
02	MALE STERILIZATION Men can have an operation to avoid having any (more) children.	YES ..... 1 NO ..... 2 →	Have you ever had a partner who had an operation to avoid having any (more) children? YES ..... 1 NO 2
03	PILL Women can take a pill every day to avoid becoming pregnant.	YES ..... 1 NO ..... 2 →	YES ..... 1 NO 2
04	IUD Women can have a loop or coil placed inside them by a doctor or a nurse.	YES ..... 1 NO ..... 2 →	YES ..... 1 NO 2
05	INJECTIONS Women can have an injection by a health provider that stops them from becoming pregnant for one or more months.	YES ..... 1 NO ..... 2 →	YES ..... 1 NO 2
06	IMPLANTS Women can have several small rods placed in their upper arm by a doctor or nurse which can prevent pregnancy for one or more years.	YES ..... 1 NO ..... 2 →	YES ..... 1 NO 2
07	CONDOM Men can put a rubber sheath on their penis before sexual intercourse.	YES ..... 1 NO ..... 2 →	YES ..... 1 NO 2
08	FEMALE CONDOM Women can place a sheath in their vagina before sexual intercourse.	YES ..... 1 NO ..... 2 →	YES ..... 1 NO 2
09	DIAPHRAGM Women can place a thin flexible disk in their vagina before intercourse.	YES ..... 1 NO ..... 2 →	YES ..... 1 NO 2
10	FOAM OR JELLY Women can place a suppository, jelly, or cream in their vagina before intercourse.	YES ..... 1 NO ..... 2 →	YES ..... 1 NO 2
11	LACTATIONAL AMENORRHEA METHOD (LAM) Up to 6 months after childbirth, a woman can use a method that requires that she breastfeeds frequently, day and night, and that her menstrual period has not returned.	YES ..... 1 NO ..... 2 →	YES ..... 1 NO 2
12	RHYTHM OR PERIODIC ABSTINENCE Every month that a woman is sexually active she can avoid pregnancy by not having sexual intercourse on the days of the month she is most likely to get pregnant.	YES ..... 1 NO ..... 2 →	YES ..... 1 NO 2
13	WITHDRAWAL Men can be careful and pull out before climax	YES ..... 1 NO ..... 2 →	YES ..... 1 NO 2
14	EMERGENCY CONTRACEPTION Women can take pills up to three days after sexual intercourse to avoid becoming pregnant.	YES ..... 1 NO ..... 2 →	YES ..... 1 NO 2
15	Have you heard of any other ways or methods that women or men can use to avoid pregnancy?	YES ..... 1 _____ (SPECIFY) _____ (SPECIFY) NO 2	YES ..... 1 NO ..... 2 YES ..... 1 NO 2

303	CHECK 302:			
	NOT A SINGLE 'YES' (NEVER USED) ☐ ↓	AT LEAST ONE 'YES' (EVER USED) ☐ →	307

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
304	Have you ever used anything or tried in any way to delay or avoid getting pregnant?	YES ..... 1 NO 2	→ 329
306	What have you used or done? CORRECT 302 (AND 301 IF NECESSARY).	_____	
307	Now I would like to ask you about the first time that you did something or used a method to avoid getting pregnant. How many living children did you have at that time, if any? IF NONE, RECORD '00'.	NUMBER OF CHILDREN ..... ☐☐	
307A	When you first began to use family planning, did you want to have a (another) child but at a later time, or did you not want to have a (another) child at all ?	WANTED CHILD LATER ..... 1 DID NOT WANT A (ANOTHER) CHILD AT ALL ..... 2 OTHER _____ 6 (SPECIFY)	
308	CHECK 302 (01): WOMAN NOT STERILIZED ☐ (↓) WOMAN STERILIZED ☐ →		311A
309	CHECK 226: NOT PREGNANT OR UNSURE ☐ (↓) PREGNANT ☐ →		329A
310	Are you currently doing something or using any method to delay or avoid getting pregnant?	YES ..... 1 NO 2	→ 329
311 311A	Which method are you using? IF MORE THAN ONE METHOD MENTIONED, FOLLOW SKIP INSTRUCTION FOR HIGHEST METHOD ON LIST. CIRCLE 'A' FOR FEMALE STERILIZATION.	FEMALE STERILIZATION ..... A MALE STERILIZATION ..... B PILL ..... C IUD ..... D INJECTABLES ..... E IMPLANTS ..... F CONDOM ..... G FEMALE CONDOM ..... H DIAPHRAGM ..... I FOAM/JELLY ..... J LACTATIONAL AMEN. METHOD ..... K PERIODIC ABSTINENCE ..... L WITHDRAWAL ..... M OTHER _____ X (SPECIFY)	A → 313 B → 313 C–M, X → 316A
312	How much does one packet or cycle of pills cost you?	COST ..... ☐☐.☐☐ FREE ..... 9996 DON'T KNOW 9998	→ 316A

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
313	In what facility did the sterilization take place? IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. _____ (NAME OF PLACE)	PUBLIC SECTOR GOVT. HOSPITAL ..... 11 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC ..... 21 PRIVATE DOCTOR ..... 23 OTHER PRIVATE MEDICAL _____ 26 (SPECIFY) OTHER _____ 96 (SPECIFY) DON'T KNOW 98	
316	In what month and year was the sterilization performed?	MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	→ 332
316A	In what month and year did you start using (CURRENT METHOD) continuously?	MONTH ..... ☐☐ YEAR ..... ☐☐☐☐	
327	CHECK 311/311A: CIRCLE METHOD CODE:	PILL ..... 03 IUD ..... 04 INJECTABLES ..... 05 IMPLANTS ..... 06 CONDOM ..... 07 FEMALE CONDOM ..... 08 DIAPHRAGM ..... 09 FOAM/JELLY ..... 10 LACTATIONAL AMEN. METHOD ..... 11 PERIODIC ABSTINENCE ..... 12 WITHDRAWAL ..... 13 OTHER METHOD 96	→ 329A
328	Where did you obtain (CURRENT METHOD) the last time? IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. _____ (NAME OF PLACE)	PUBLIC SECTOR GOVT. HOSPITAL ..... 11 GOVT. HEALTH CENTER ..... 12 FAMILY PLANNING CLINIC ..... 13 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC ..... 21 PHARMACY ..... 22 PRIVATE DOCTOR ..... 23 OTHER PRIVATE MEDICAL _____ 26 (SPECIFY) OTHER SOURCE SHOP ..... 31 FRIEND/RELATIVE ..... 32 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	→ 332

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
329	What is the main reason you are not using a method of contraception to delay or avoid pregnancy?	NOT MARRIED ..... 11 FERTIILITY RELATED REASONS NOT HAVING SEX ..... 21 INFREQUESNT SEX ..... 22 MENOPOSAL/HYSTERECTOMY ..... 23 SUBFECUND/INFECUND ..... 24 POSTPARTUM/BREASTFEEDING ..... 25 WANTS MORE CHILDREN ..... 26 OPPOSITION TO USE RESPONDENT OPPOSED ..... 31 HUSBAND OPPOSED ..... 32 OTHERS OPPOSED ..... 33 RELIGIOUS PROHIBITION ..... 34 LACK OF KNOWLEDGE KNOWS NO METHODS ..... 41 KNOWS NO SOURCE ..... 42 METHOD RELATED REASONS HEALTH CONCERNS ..... 51 FEAR OF SIDE EFFECTS ..... 52 LACK OF ACCESS/TOO FAR ..... 53 COST TOO MUCH ..... 54 INCONVINIENT TO USE ..... 55 INTERFEARS WITH BODY'S NORMAL PROCESSES ..... 56 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	
329A	Do you know of a place where you can obtain a method of family planning?	YES ..... 1 NO ..... 2 → 332	
330	Where is that? IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC,WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. _____ (NAME OF PLACE) Any other place? RECORD ALL PLACES MENTIONED.	PUBLIC SECTOR GOVT. HOSPITAL ..... A GOVT. HEALTH CENTER ..... B FAMILY PLANNING CLINIC ..... C OTHER PUBLIC _____ D (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC ..... E PHARMACY ..... F PRIVATE DOCTOR ..... G OTHER PRIVATE MEDICAL _____ H (SPECIFY) OTHER SOURCE SHOP ..... I FRIEND/RELATIVE ..... J OTHER _____ X (SPECIFY)	
332	In the last 12 months, have you visited a health facility for care of yourself (or your children)?	YES ..... 1 NO ..... 2 → 401	
333	Did any staff member at the health facility speak to you about family planning methods?	YES ..... 1 NO 2	

SECTION 4A. PREGNANCY, POSTNATAL CARE AND BREASTFEEDING

401	CHECK 224: ONE OR MORE BIRTHS IN 1997 OR LATER ☐ ↓ NO BIRTH IN 1997 OR LATER ☐ → 483A		
402	ENTER IN THE TABLE THE LINE NUMBER, NAME, AND SURVIVAL STATUS OF EACH BIRTH IN 1997 OR LATER. ASK THE QUESTIONS ABOUT ALL OF THESE BIRTHS. BEGIN WITH THE LAST BIRTH. (IF THERE ARE MORE THAN 2 BIRTHS, USE LAST COLUMN OF ADDITIONAL QUESTIONNAIRES). Now I would like to ask you some questions about the health of all your children born in the last five years. (We will talk about each separately)		
403	LINE NUMBER FROM 212	LAST BIRTH LINE NUMBER ..... ☐☐	NEXT-TO-LAST BIRTH LINE NUMBER ..... ☐☐
404	NAME FROM 212 AND SURVIVAL STATUS FROM 216	NAME _____ ALIVE ☐ ↓ DEAD ☐ ↓	NAME _____ ALIVE ☐ ↓ DEAD ☐ ↓
405	At the time you became pregnant with (NAME), did you want to become pregnant then, did you want to wait until later, or did you not want to have any (more) children at all?	THEN ..... 1 (SKIP TO 406A) ← LATER ..... 2 NOT AT ALL ..... 3 (SKIP TO 406A) ←	THEN ..... 1 (SKIP TO 423) ← LATER ..... 2 NOT AT ALL ..... 3 (SKIP TO 423) ←
406	How much longer would you like to have waited?	MONTHS ..... 1 ☐☐ YEARS ..... 2 ☐☐ DON'T KNOW 998	MONTHS ..... 1 ☐☐ YEARS ..... 2 ☐☐ DON'T KNOW 998
406A	When you were pregnant with (NAME), did you see anyone for antenatal care?	YES ..... 1 NO ..... 2 (SKIP TO 415) ←	
407	Whom did you see for antenatal care for this pregnancy? Anyone else? PROBE FOR THE TYPE OF PERSON AND RECORD ALL PERSONS SEEN.	PUBLIC MEDICAL SECTOR DOCTOR ..... A NURSE/MIDWIFE ..... B AUXILIARY MIDWIFE ..... C PRIVATE MEDICAL SECTOR DOCTOR ..... D NURSE/MIDWIFE ..... E AUXILIARY MIDWIFE ..... F OTHER PERSON TRADITIONAL BIRTH ATTENDANT ..... G OTHER _____ X (SPECIFY)	
408	How many months pregnant were you when you first received antenatal care for this pregnancy?	MONTHS ..... ☐☐ DON'T KNOW 98	
409	How many times did you receive antenatal care during this pregnancy?	NO. OF TIMES ..... ☐☐ DON'T KNOW 98	
410	CHECK 409: NUMBER OF TIMES RECEIVED ANTENATAL CARE	ONCE ☐ ↓ (SKIP TO 412) MORE THAN ONCE OR DON'T KNOW ☐ ↓	

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
411	How many months pregnant were you the last time you received antenatal care?	MONTHS..... ☐☐ DON'T KNOW..... 98	
412	During this pregnancy, were any of the following done at least once?	YES NO	
	Were you weighed?	WEIGHT..... 1 2	
	Was your height measured?	HEIGHT..... 1 2	
	Was your blood pressure measured?	BLOOD PRESSURE..... 1 2	
	Did you give a urine sample?	URINE SAMPLE 1 2	
	Did you give a blood sample?	BLOOD SAMPLE..... 1 2	
413	Were you told about the signs of pregnancy complications?	YES..... 1 NO..... 2 (SKIP TO 415) ← DON'T KNOW..... 8	
414	Were you told where to go if you had these complications?	YES..... 1 NO..... 2 DON'T KNOW..... 8	
415	During this pregnancy, were you given an injection in the arm to prevent the baby from getting tetanus, that is, convulsions after birth?	YES..... 1 NO..... 2 (SKIP TO 417) ← DON'T KNOW..... 8	
416	During this pregnancy, how many times did you get this injection?	TIMES..... ☐ DON'T KNOW 8	
417	During this pregnancy, did you receive iron tablets? SHOW TABLETS	YES..... 1 NO..... 2 (SKIP TO 418A) ← DON'T KNOW..... 8	
418	During the whole pregnancy, for how many days did you take the tablets? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER OF DAYS.	NUMBER OF DAYS..... ☐☐☐ DON'T KNOW 998	
418A	During this pregnancy, did you receive multiple vitamin tablets or syrup? SHOW TABLET AND SYRUP	YES..... 1 NO..... 2 DON'T KNOW..... 8	
418B	During this pregnancy, did you receive vitamin C tablets like this? SHOW TABLETS	YES..... 1 NO..... 2 DON'T KNOW..... 8	
419	During this pregnancy did you have difficulty with your vision during the daylight?	YES..... 1 NO..... 2 DON'T KNOW..... 8	
420	During this pregnancy, did you suffer from night blindness?	YES..... 1 NO..... 2 DON'T KNOW..... 8	
421	During this pregnancy, did you take any drugs in order to prevent you from getting malaria?	YES..... 1 NO..... 2 (SKIP TO 423) ← DON'T KNOW..... 8	

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
422	Which drugs did you take to prevent malaria? RECORD ALL MENTIONED IF TYPE OF DRUG IS NOT DETERMINED, SHOW ANTIMALARIAL DRUGS TO RESPONDENT FOR EACH DRUG CIRCLED, ASK: How many times did you take (NAME OF DRUG) during this pregnancy?	TIMES CHLOROQUINE..... A ☐☐ FANSIDAR..... B ☐☐ OTHER_____ X ☐☐ (SPECIFY) DON'T KNOW..... Z	
422A	CHECK 406A: SEE ANYONE FOR ANTENATAL CARE DURING THIS PREGNANCY?	ANY ONE ☐ NO ONE ☐ (SKIP TO 423)	
422B	Did you get these drugs during an antenatal visit, another visit to health facility or from some other source?	ANTENATAL VISIT..... 1 ANOTHER FACILITY VISITS..... 2 OTHER SOURCE _____ 6 (SPECIFY)	
423	When (NAME) was born, was he/she very large, larger than average, average, smaller than average, or very small?	VERY LARGE..... 1 LARGER THAN AVERAGE..... 2 AVERAGE..... 3 SMALLER THAN AVERAGE..... 4 VERY SMALL..... 5 DON'T KNOW..... 8	VERY LARGE..... 1 LARGER THAN AVERAGE..... 2 AVERAGE..... 3 SMALLER THAN AVERAGE..... 4 VERY SMALL..... 5 DON'T KNOW..... 8
424	Was (NAME) weighed at birth?	YES..... 1 NO..... 2 (SKIP TO 426) DON'T KNOW..... 8	YES..... 1 NO..... 2 (SKIP TO 426) DON'T KNOW..... 8
425	How much did (NAME) weigh? RECORD WEIGHT FROM HEALTH CARD, IF AVAILABLE.	GRAMS FROM CARD..... 1 ☐☐☐☐ GRAMS FROM RECALL..... 2 ☐☐☐☐ DON'T KNOW..... 99998	GRAMS FROM CARD..... 1 ☐☐☐☐ GRAMS FROM RECALL..... 2 ☐☐☐☐ DON'T KNOW..... 99998
426	Who assisted with the delivery of (NAME)? Anyone else? PROBE FOR THE TYPE OF PERSON AND RECORD ALL PERSONS ASSISTING. IF RESPONDENT SAYS NO ONE ASSISTED, PROBE TO DETERMINE WHETHER ANY ADULTS WERE PRESENT AT THE DELIVERY	PUBLIC MEDICAL SECTOR DOCTOR..... A NURSE/MIDWIFE..... B AUXILIARY MIDWIFE..... C PRIVATE MEDICAL SECTOR DOCTOR..... D NURSE/MIDWIFE..... E AUXILIARY MIDWIFE..... F OTHER PERSON TRADITIONAL BIRTH ATTENDANT..... G RELATIVE/FRIEND..... H OTHER_____ X (SPECIFY) NO ONE..... Y	PUBLIC MEDICAL SECTOR DOCTOR..... A NURSE/MIDWIFE..... B AUXILIARY MIDWIFE..... C PRIVATE MEDICAL SECTOR DOCTOR..... D NURSE/MIDWIFE..... E AUXILIARY MIDWIFE..... F OTHER PERSON TRADITIONAL BIRTH ATTENDANT..... G RELATIVE/FRIEND..... H OTHER _____ X (SPECIFY) NO ONE..... Y

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
426A	At the time of the birth of (NAME), did you have any of the following problems:	YES NO	YES NO
	Long labor, that is , did your regular contractions last more than 12 hours?	LABOR MORE THAN12 HOURS..... 1 2	LABOR MORE THAN12 HOURS..... 1 2
	Excessive bleeding that was so much that you feared it was life threatening?	EXCESSIVE BLEEDING..... 1 2	EXCESSIVE BLEEDING..... 1 2
	A high fever with bad smelling vaginal discharge?	FEVER/BAD SMELLING VAG. DISCHARGE..... 1 2	FEVER/BAD SMELLING VAG. DISCHARGE..... 1 2
	Convulsions not caused by fever?	CONVULSIONS 1 2	CONVULSIONS 1 2
427	Where did you give birth to (NAME)? IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. _____ (NAME OF PLACE)	HOME YOUR HOME ..... 11 (SKIP TO 429) ← OTHER HOME ..... 12 PUBLIC SECTOR GOVT.HOSPITAL ..... 21 GOVT. HEALTH CENTER..... 22 GOVT. HEALTH STATION ..... 23 OTHER PUBLIC _____ 26 (SPECIFY) PRIVATE MEDICAL SECTOR PVT.HOSPITAL/CLINIC ..... 31 OTHER PRIVATE MEDICAL _____ 36 (SPECIFY) OTHER_____ 96 (SPECIFY) (SKIP TO 429) ←	HOME YOUR HOME ..... 11 (SKIP TO 429) ← OTHER HOME ..... 12 PUBLIC SECTOR GOVT.HOSPITAL ..... 21 GOVT. HEALTH CENTER..... 22 GOVT. HEALTH STATION ..... 23 OTHER PUBLIC _____ 26 (SPECIFY) PRIVATE MEDICAL SECTOR PVT.HOSPITAL/CLINIC ..... 31 OTHER PRIVATE MEDICAL _____ 36 (SPECIFY) OTHER _____ 96 (SPECIFY) (SKIP TO 429) ←
428	Was (NAME) delivered by caesarian section?	YES ..... 1 (SKIP TO 433) ← NO..... 2	YES ..... 1 (SKIP TO 435) ← NO..... 2
429	After (NAME) was born, did a health professional or a traditional birth attendant check on your health?	YES ..... 1 NO..... 2 (SKIP TO 433) ←	YES ..... 1 NO..... 2
430	How many days or weeks after delivery did the first check take place? RECORD '00' DAYS IF SAME DAY.	DAYS AFTER DEL ..... 1 ☐☐ WEEKS AFTER DEL ..... 2 ☐☐ DON'T KNOW..... 998	
431	Who checked on your health at that time? PROBE FOR MOST QUALIFIED PERSON.	PUBLIC MEDICAL SECTOR DOCTOR..... 11 NURSE/MIDWIFE ..... 12 AUXILIARY MIDWIFE .....13 PRIVATE MEDICAL SECTOR DOCTOR.....21 NURSE/MIDWIFE .....22 AUXILIARY MIDWIFE.....23 OTHER PERSON TRADITIONAL BIRTH ATTENDANT..... 31 OTHER_____ 96 (SPECIFY)	

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
432	Where did this first check take place? IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. _____ (NAME OF PLACE)	HOME YOUR HOME ..... 11 OTHER HOME ..... 12 PUBLIC SECTOR GOVT. HOSPITAL ..... 21 GOVT. HEALTH CENTER ..... 22 GOVT. HEALTH STATION ..... 23 OTHER PUBLIC _____ 26 (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... 31 OTHER PVT. MEDICAL _____ 36 (SPECIFY) OTHER _____ 96 (SPECIFY)	
433	In the first two months after delivery, did you receive a vitamin A dose like this? SHOW AMPULE, CAPSULE, AND SYRUP.	YES ..... 1 NO 2	
434	Has your period returned since the birth of (NAME)?	YES ..... 1 (SKIP TO 436) NO ..... 2 (SKIP TO 437)	
435	Did your period return between the birth of (NAME) and your next pregnancy?		YES ..... 1 NO ..... 2 (SKIP TO 439)
436	For how many months after the birth of (NAME) did you not have a period?	MONTHS ..... ☐☐ DON'T KNOW 98	MONTHS ..... ☐☐ DON'T KNOW 98
437	CHECK 226: IS RESPONDENT PREGNANT?	NOT PREG-NANT ☐ PREGNANT OR UNSURE ☐ (SKIP TO 439)	
438	Have you resumed sexual relations since the birth of (NAME)?	YES ..... 1 NO ..... 2 (SKIP TO 440)	
439	For how many months after the birth of (NAME) did you not have sexual relations?	MONTHS ..... ☐☐ DON'T KNOW 98	MONTHS ..... ☐☐ DON'T KNOW 98
440	Did you ever breastfeed (NAME)?	YES ..... 1 NO ..... 2 (SKIP TO 447)	YES ..... 1 NO ..... 2 (SKIP TO 447)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
441	How long after birth did you first put (NAME) to the breast? IF LESS THAN 1 HOUR, RECORD '00' HOURS. IF LESS THAN 24 HOURS, RECORD HOURS. OTHERWISE, RECORD DAYS.	IMMEDIATELY ..... 000 HOURS ..... 1 ☐☐ DAYS ..... 2 ☐☐	IMMEDIATELY ..... 000 HOURS ..... 1 ☐☐ DAYS ..... 2 ☐☐
442	In the first three days after delivery, was (NAME) given anything to drink other than breast milk?	YES ..... 1 NO ..... 2 (SKIP TO 444) ←	YES ..... 1 NO ..... 2 (SKIP TO 444) ←
443	What was (NAME) given to drink ? Anything else? RECORD ALL LIQUIDS MENTIONED.	FRESH MILK (OTHER THAN BREAST MILK) ..... A TINNED /POWDERED MILK ..... B PLAIN WATER ..... C SUGAR OR GLUCOSE WATER ..... D GRIPE WATER ..... E SUGAR-SALT-WATER SOLUTION ..... F FRUIT JUICE ..... G INFANT FORMULA ..... H TEA/INFUSIONS/ABAKE OR KERKEDE ..... I HONEY ..... J BUTTER ..... K OTHER_____ X (SPECIFY)	FRESH MILK (OTHER THAN BREAST MILK) ..... A TINNED /POWDERED MILK ..... B PLAIN WATER ..... C SUGAR OR GLUCOSE WATER ..... D GRIPE WATER ..... E SUGAR-SALT-WATER SOLUTION ..... F FRUIT JUICE ..... G INFANT FORMULA ..... H TEA/INFUSIONS/ABAKE OR KERKEDE ..... I HONEY ..... J BUTTER ..... K OTHER_____ X (SPECIFY)
444	CHECK 404: CHILD ALIVE?	ALIVE ☐ ↓ DEAD ☐ ↓ (SKIP TO 446)	ALIVE ☐ ↓ DEAD ☐ ↓ (SKIP TO 446)
445	Are you still breastfeeding (NAME)?	YES ..... 1 (SKIP TO 448) ← NO 2	YES ..... 1 (SKIP TO 448) ← NO 2
446	For how many months did you breastfeed (NAME)?	MONTHS ..... ☐☐ DON'T KNOW 98	MONTHS ..... ☐☐ DON'T KNOW 98
446A	Why did you stop breastfeeding (NAME)?	MOTHER ILL/ WEAK ..... 01 CHILD ILL/ WEAK ..... 02 CHILD DIED ..... 03 NIPPLE/BREAST PROBLEM ..... 04 NOT ENOUGH MILK ..... 05 MOTHER WORKING ..... 06 CHILD REFUSED ..... 07 WEANING AGE/ AGE TO STOP ... 08 BECAME PREGNANT ..... 09 STARTED USING CONTRACEPTION ..... 10 OTHER _____ 96 (SPECIFY)	MOTHER ILL/ WEAK ..... 01 CHILD ILL/ WEAK ..... 02 CHILD DIED ..... 03 NIPPLE/BREAST PROBLEM ..... 04 NOT ENOUGH MILK ..... 05 MOTHER WORKING ..... 06 CHILD REFUSED ..... 07 WEANING AGE/ AGE TO STOP ... 08 BECAME PREGNANT ..... 09 STARTED USING CONTRACEPTION ..... 10 OTHER _____ 96 (SPECIFY)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
447	CHECK 404: CHILD ALIVE?	ALIVE ☐ → (SKIP TO 450) DEAD ☐ → (GO BACK TO 403/404 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 452)	ALIVE ☐ → (SKIP TO 450) DEAD ☐ → (GO BACK TO 403/404 IN LAST COLUMN OF NEW QUESTION-NAIRE; OR, IF NO MORE BIRTHS, GO TO 452)
448	How many times did you breastfeed last night between sunset and sunrise? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER.	NUMBER OF NIGHT TIME FEEDINGS.... ☐☐	NUMBER OF NIGHT TIME FEEDINGS..... ☐☐
449	How many times did you breastfeed yesterday during the daylight hours? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER.	NUMBER OF DAYLIGHT FEEDINGS ..... ☐☐	NUMBER OF DAYLIGHT FEEDINGS ..... ☐☐
450	Did (NAME) drink anything from a bottle with a nipple yesterday or last night?	YES..... 1 NO..... 2 DON'T KNOW..... 8	YES..... 1 NO..... 2 DON'T KNOW 8
451	Was sugar added to any of the foods or liquids (NAME) ate yesterday?	YES..... 1 NO..... 2 DON'T KNOW..... 8	YES..... 1 NO..... 2 DON'T KNOW 8
451A	(Aside from breastfeeding and other liquids), how many times did (NAME) eat solid, semi-solid or soft foods yesterday or at night, including both meals and snacks? IF 7 OR MORE TIMES, RECORD '7'.	NUMBER OF TIMES ..... ☐ DON'T KNOW..... 8	NUMBER OF TIMES ..... ☐ DON'T KNOW 8
451B		GO BACK TO 403/404 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 452.	GO BACK TO 403/404 IN LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 452.

NO.	QUESTIONS AND FILTERS	SKIP
452	CHECK 215 AND 218 HAS AT LEAST ONE CHILD BORN IN 1999 OR LATER AND LIVING WITH HER ☐ DOES NOT HAVE ANY CHILDREN BORN IN 1999 OR LATER AND LIVING WITH HER ☐ → 454 RECORD NAME OF YOUNGEST CHILD LIVING WITH HER (AND CONTINUE WITH 452A) _____ (NAME)	

			LAST 7 DAYS	YESTERDAY/ LAST NIGHT
452A	Now I would like to ask you about liquids (NAME FROM Q452) drank over the last seven days, including yesterday. How many days during the last 7 days did (NAME FROM Q452) drink each of the following? FOR EACH ITEM GIVEN AT LEAST ONCE IN LAST SEVEN DAYS, BEFORE PROCEEDING TO THE NEXT ITEM, ASK: In total, how many times yesterday during the day or at night did (NAME FROM Q452) drink (ITEM)?		NUMBER OF DAYS	NUMBER OF TIMES
a	Plain water?	a	☐	☐
b	Sugar water?	b	☐	☐
c	Fruit juice?	c	☐	☐
d	Tea, kerkede,abake, coffee, soft drinks?	d	☐	☐
e	Baby formula?	e	☐	☐
f	Tinned or powdered milk?	f	☐	☐
g	Fresh milk?	g	☐	☐
h	Any other liquids?	h	☐	☐
	FOR EACH ITEM NOT GIVEN IN THE LAST SEVEN DAYS RECORD '0' IN THE CORROSPONDING NUMBER OF DAYS BOX AND LEAVE THE NUMBER OF TIMES BOX BLANK. IF 7 OR MORE TIMES, RECORD '7'. IF DON'T KNOW RECORD '8'.			

			LAST 7 DAYS	YESTERDAY/ LAST NIGHT
452B	Now I would like to ask you about type of foods (NAME FROM Q452) ate over the last seven days, including yesterday. How many days during the last 7 days did (NAME FROM Q452) eat each of the following foods either separately or combined with other food? FOR EACH ITEM GIVEN AT LEAST ONCE IN LAST SEVEN DAYS, BEFORE PROCEEDING TO THE NEXT ITEM, ASK: In total, how many times yesterday during the day or at night did (NAME FROM Q452) eat (ITEM)?		NUMBER OF DAYS	NUMBER OF TIMES
a	Any green leafy vegetables?	a	☐	☐
b	Mangos and Papayas?	b	☐	☐
c	Any other fruits such as orange, bananas, apples/sauce, avocados, tomatoes?	c	☐	☐
d	Pumpkin, red or yellow yams or squash, carrots, or red sweet potatoes?	d	☐	☐
e	Injera	e	☐	☐
f	Any food made from grains such as gaat, sebko, ajja, biscuits etc.?	f	☐	☐
g	Any other food made from roots or tubers such as white potatoes, white yams, manioc, cassava, or other local roots or tubers?	g	☐	☐
h	Any food made from legumes such as lentils, beans, soyabeans, pulses, or peanuts?	h	☐	☐
i	Cheese or yoghurt?	i	☐	☐
j	Meat, poultry, fish or Eggs?	j	☐	☐
k	Any food made with oil, fat, or butter?	k	☐	☐
l	Any other solid or semi-solid foods?	l	☐	☐
	FOR EACH ITEM NOT GIVEN IN THE LAST SEVEN DAYS RECORD '0' IN THE CORROSPONDING NUMBER OF DAYS BOX AND LEAVE THE NUMBER OF TIMES BOX BLANK. IF 7 OR MORE TIMES, RECORD '7'. IF DON'T KNOW RECORD '8'.			

SECTION 4B. IMMUNIZATION, HEALTH AND NUTRITION

454	ENTER IN THE TABLE THE LINE NUMBER, NAME, AND SURVIVAL STATUS OF EACH BIRTH IN 1997 OR LATER. ASK THE QUESTIONS ABOUT ALL OF THESE BIRTHS. BEGIN WITH THE LAST BIRTH (IF THERE ARE MORE THAN 2 BIRTHS, USE LAST COLUMN OF ADDITIONAL QUESTIONNAIRES).		
455	LINE NUMBER FROM 212	LAST BIRTH LINE NUMBER..... ☐☐	NEXT-TO-LAST BIRTH LINE NUMBER ..... ☐☐
456	NAME FROM 212 AND ALIVE OR DEAD FROM 216	NAME _____ ALIVE ☐ → DEAD ☐ → (GO TO 456 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 483A)	NAME _____ ALIVE ☐ → DEAD ☐ → (GO TO 456 IN LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 483A)
457	Did (NAME) receive a vitamin A dose like this during the last 6 months? SHOW AMPULE, CAPSULE AND SYRUP.	YES..... 1 NO ..... 2 DON'T KNOW 8	YES ..... 1 NO..... 2 DON'T KNOW..... 8
458	Do you have a card where (NAME'S) vaccinations are written down? IF YES: May I see it please?	YES, SEEN..... 1 (SKIP TO 460) YES, NOT SEEN ..... 2 (SKIP TO 462) NO CARD 3	YES, SEEN ..... 1 (SKIP TO 460) YES, NOT SEEN..... 2 (SKIP TO 462) NO CARD..... 3
459	Did you ever have a vaccination card for (NAME)?	YES..... 1 (SKIP TO 462) NO 2	YES ..... 1 (SKIP TO 462) NO..... 2
460	(1) COPY VACCINATION DATE FOR EACH VACCINE FROM THE CARD. (2) WRITE '44' IN 'DAY' COLUMN IF CARD SHOWS THAT A VACCINATION WAS GIVEN, BUT NO DATE IS RECORDED.		

	VACCINE		DAY	MONTH	YEAR	VACCINE	DAY	MONTH	YEAR
	BCG	BCG				BCG			
	POLIO 0 (POLIO GIVEN AT BIRTH)	POLIO 0				POLIO 0			
	POLIO 1	POLIO 1				POLIO 1			
	POLIO 2	POLIO 2				POLIO 2			
	POLIO 3	POLIO 3				POLIO 3			
	DPT 1	DPT 1				DPT 1			
	DPT 2	DPT 2				DPT 2			
	DPT 3	DPT 3				DPT 3			
	MEASLES	MEASLES				MEASLES			

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
460A	CHECK 460: CHILD RECEIVED ALL VACCINATIONS	NO ☐ YES ☐ (SKIP TO 464)	NO ☐ YES ☐ (SKIP TO 464)
461	Has (NAME) received any vaccinations that are not recorded on this card? RECORD 'YES' ONLY IF RESPONDENT MENTIONS BCG, POLIO 0-3, DPT 1-3, AND/OR MEASLES VACCINE (S).	YES ..... 1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 460) (SKIP TO 464) NO ..... 2 DON'T KNOW 8	YES ..... 1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 460) (SKIP TO 464) NO ..... 2 DON'T KNOW 8
462	Did (NAME) ever receive any vaccinations to prevent him/her from getting diseases, including vaccinations received in a national immunization day campaign?	YES ..... 1 NO ..... 2 (SKIP TO 465A) DON'T KNOW 8	YES ..... 1 NO ..... 2 (SKIP TO 465A) DON'T KNOW 8
463	Please tell me if (name) received any of the following vaccinations:		
463A	A BCG vaccination against tuberculosis that is, an injection in the arm or shoulders that usually causes a scar?	YES ..... 1 NO ..... 2 DON'T KNOW 8	YES ..... 1 NO ..... 2 DON'T KNOW 8
463B	Polio vaccine, that is, drops in the mouth?	YES ..... 1 NO ..... 2 (SKIP TO 463E) DON'T KNOW 8	YES ..... 1 NO ..... 2 (SKIP TO 463E) DON'T KNOW 8
463C	When was the first polio vaccine received, just after birth or later?	JUST AFTER BIRTH ..... 1 LATER 2	JUST AFTER BIRTH ..... 1 LATER 2
463D	How many times was the polio vaccine received?	NUMBER OF TIMES ..... ☐	NUMBER OF TIMES ..... ☐
463E	A DPT vaccination, that is, an injection given in the thigh or buttocks, sometimes at the same time as polio drops?	YES ..... 1 NO ..... 2 (SKIP TO 463G) DON'T KNOW 8	YES ..... 1 NO ..... 2 (SKIP TO 463G) DON'T KNOW 8
463F	How many times was the DPT received?	NUMBER OF TIMES ..... ☐	NUMBER OF TIMES ..... ☐
463G	An injection to prevent measles?	YES ..... 1 NO ..... 2 DON'T KNOW 8	YES ..... 1 NO ..... 2 DON'T KNOW 8
464	Were any of the vaccinations (NAME) received during the last two years given as a part of a national immunization day campaign?	YES ..... 1 NO ..... 2 (SKIP TO 465A) NO VACCINATION IN THE LAST 2 YEARS ..... 3 (SKIP TO 465A) DON'T KNOW ..... 8 (SKIP TO 465A)	YES ..... 1 NO ..... 2 (SKIP TO 465A) NO VACCINATION IN THE LAST 2 YEARS ..... 3 (SKIP TO 465A) DON'T KNOW ..... 8 (SKIP TO 465A)
465	At which national immunization day campaigns did (NAME) receive vaccinations? RECORD ALL CAMPAIGNS MENTIONED	POLIO VACCINATION COMPAIGN 2000 ..... A POLIO VACCINATION COMPAIGN 2001 ..... B POLIO VACCINATION COMPAIGN 2002 C	POLIO VACCINATION COMPAGIN 2000 ..... A POLIO VACCINATION COMPAGIN 2001 ..... B POLIO VACCINATION COMPAIGN 2002 C

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
465A	CHECK 27 IN THE HOUSEHOLD QUESTIONNAIRE BED NETS IN THE HOUSEHOLD?	YES ☐ NO ☐ (SKIP TO 466)	YES ☐ NO ☐ (SKIP TO 466)
465B	Does (NAME) usually sleep under a mosquito net?	YES ..... 1 NO 2	YES ..... 1 NO 2
465C	Did (NAME) sleep under a mosquito net last night?	YES ..... 1 (SKIP TO 465E) NO ..... 2 DON'T KNOW 8	YES ..... 1 (SKIP TO 465E) NO ..... 2 DON'T KNOW 8
465D	CHECK 465B: SLEEPS UNDER A MOSQUITO NET?	YES ☐ NO ☐ (SKIP TO 466)	YES ☐ NO ☐ (SKIP TO 466)
465E	Now let us talk about the mosquito net (NAME) sleeps under. How long ago was the mosquito net bought or obtained? IF LESS THAN ONE MONTH, RECORD '00'. IF MORE THAN 95 MONTHS, RECORD '95'.	MONTHS ..... ☐☐ DON'T KNOW 98	MONTHS ..... ☐☐ DON'T KNOW 98
465F	Since you got the mosquito net, was it ever soaked or dipped in a liquid to repel mosquitoes or bugs?	YES ..... 1 NO ..... 2 (SKIP TO 466) DON'T KNOW 8	YES ..... 1 NO ..... 2 (SKIP TO 466) DON'T KNOW 8
465G	How long ago was the mosquito net last soaked or dipped? IF LESS THAN 1 MONTH, RECORD '00'. IF MORE THAN 95 MONTHS, RECORD '95'.	MONTHS ..... ☐☐ DON'T KNOW 98	MONTHS ..... ☐☐ DON'T KNOW 98
466	Has (NAME) been ill with a fever at any time in the last 2 weeks?	YES ..... 1 NO ..... 2 (SKIP TO 467) DON'T KNOW 8	YES ..... 1 NO ..... 2 (SKIP TO 467) DON'T KNOW 8
466A	Does (NAME) have a fever now?	YES ..... 1 NO ..... 2 DON'T KNOW 8	YES ..... 1 NO ..... 2 DON'T KNOW 8
466B	Was (NAME) given drugs for the fever?	YES ..... 1 NO ..... 2 (SKIP TO 467) DON'T KNOW 8	YES ..... 1 NO ..... 2 (SKIP TO 467) DON'T KNOW 8

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
466C	What drugs did (NAME) take? RECORD ALL MENTIONED ASK TO SEE DRUG(S) IF TYPE OF DRUG IS NOT KNOWN. IF TYPE OF DRUGS IS STILL NOT DETREMINED, SHOW TYPICAL ANTI-MALARIAL DRUGS TO RESPONDENT. FOR EACH ANTI-MALARIAL DRUGS TAKEN ASK: For how many days (NAME) take (NAME OF THE DRUGS)?	ANTI-MALARIAL DAYS CHLOROQUINE ..... A ☐☐ FANSIDAR ..... B ☐☐ QUININE ..... C ☐☐ OTHER DRUGS ASPRIN ..... E PANADOL ..... F OTHER _____ X (SPECIFY) DON'T KNOW ..... Z	ANTI-MALARIAL DAYS CHLOROQUINE ..... A ☐☐ FANSIDAR ..... B ☐☐ QUININE ..... C ☐☐ OTHER DRUGS ASPRIN ..... E PANADOL ..... F OTHER _____ X (SPECIFY) DON'T KNOW ..... Z
466D	CHECK 466C: ANTI-MALARIAL DRUG GIVEN?	CODE A, B, OR C CIRCLED ☐ CODES A, B AND C NOT CIRCLED ☐ (SKIP TO 467)	CODE A, B, OR C CIRCLED ☐ CODES A, B AND C NOT CIRCLED ☐ (SKIP TO 467)
466E	How long after the fever started did (NAME) first take (NAMES OF THE ANTI-MALARIAL DRUGS CIRCLED IN 466C)?	SAME DAY ..... 0 NEXT DAY ..... 1 TWO DAYS AFTER THE FEVER ..... 2 THREE OR MORE DAYS AFTER THE FEVER ..... 3 DON'T KNOW 8	SAME DAY ..... 0 NEXT DAY ..... 1 TWO DAYS AFTER THE FEVER ..... 2 THREE OR MORE DAYS AFTER THE FEVER ..... 3 DON'T KNOW 8
466F	Is the child still taking (NAMES OF THE ANTI-MALARIAL DRUGS CIRCLED IN 466C)?	YES ..... 1 NO ..... 2 DON'T KNOW 8	YES ..... 1 NO ..... 2 DON'T KNOW 8
467	Has (NAME) had an illness with a cough at any time in the last 2 weeks?	YES ..... 1 NO ..... 2 (SKIP TO 475) DON'T KNOW 8	YES ..... 1 NO ..... 2 (SKIP TO 475) DON'T KNOW 8
468	When (NAME) had an illness with a cough, did he/she breathe faster than usual with short, rapid breaths?	YES ..... 1 NO ..... 2 DON'T KNOW 8	YES ..... 1 NO ..... 2 DON'T KNOW 8
470	Did you seek advice or treatment for the cough?	YES ..... 1 NO ..... 2 (SKIP TO 475)	YES ..... 1 NO ..... 2 (SKIP TO 475)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
471	Where did you seek advice or treatment for the cough? Anywhere else? RECORD ALL SOURCES MENTIONED.	PUBLIC SECTOR GOVT. HOSPITAL ..... A GOVT. HEALTH CENTER..... B GOVT. HEALTH STATION ..... C OTHER PUBLIC _____ F (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... G PHARMACY ..... H PVT. DOCTOR..... I COMM. HEALTH WORKER ..... K OTHER PVT. MEDICAL _____ L (SPECIFY) OTHER SOURCE SHOP ..... M TRAD. PRACTITIONER..... N OTHER _____ X (SPECIFY)	PUBLIC SECTOR GOVT. HOSPITAL ..... A GOVT. HEALTH CENTER..... B GOVT. HEALTH STATION ..... C OTHER PUBLIC _____ F (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC..... G PHARMACY ..... H PVT. DOCTOR..... I COMM. HEALTH WORKER..... K OTHER PVT. MEDICAL _____ L (SPECIFY) OTHER SOURCE SHOP..... M TRAD. PRACTITIONER..... N OTHER _____ X (SPECIFY)
475	Has (NAME) had diarrhea in the last 2 weeks?	YES..... 1 NO..... 2 (SKIP TO 483) ← DON'T KNOW 8	YES ..... 1 NO..... 2 (SKIP TO 483) ← DON'T KNOW..... 8
475A	Was there any blood in the stools?	YES..... 1 NO..... 2 DON'T KNOW 8	YES ..... 1 NO..... 2 DON'T KNOW..... 8
476	Now I would like to now haw much (NAME) was offered to drink during the diarrhea. Was he\she offered less then usual to drink, about the same amount, more than usual to drink?	LESS..... 1 ABOUT SAME ..... 2 MORE..... 3 NOTHING TO DRINK..... 4 DON'T KNOW 8	LESS ..... 1 ABOUT SAME..... 2 MORE ..... 3 NOTHING TO DRINK ..... 4 DON'T KNOW..... 8
477	When name had diarrhea, was he\she offered less then usual to eat, about the same amount, more than usual to eat?	LESS..... 1 ABOUT SAME ..... 2 MORE..... 3 STOPED TO EAT..... 4 NOTHING TO EAT..... 5 DON'T KNOW 8	LESS ..... 1 ABOUT SAME..... 2 MORE ..... 3 STOPED TO EAT ..... 4 NOTHING TO EAT ..... 5 DON'T KNOW..... 8
478	Was (NAME) given a fluid made from a special packet called ORS to drink? SHOW ORS PACKET	YES..... 1 NO..... 2 DON'T KNOW 8	YES ..... 1 NO..... 2 DON'T KNOW..... 8
478A	Was (NAME) given a government- recommended homemade fluid?	YES..... 1 NO..... 2 DON'T KNOW 8	YES ..... 1 NO..... 2 DON'T KNOW..... 8
479	Was anything (else) given to treat the diarrhea?	YES..... 1 NO..... 2 (SKIP TO 481) ← DON'T KNOW 8	YES ..... 1 NO..... 2 (SKIP TO 481) ← DON'T KNOW..... 8

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
480	What was given to treat the diarrhea? Anything else? RECORD ALL MENTIONED.	HOME MADE LIQUIDS ..... A PILL OR SYRUP ..... B INJECTION ..... C (I.V.) INTRAVENOUS ..... D HOME REMEDIES/ HERBAL MEDICINES ..... E OTHER _____ X (SPECIFY)	HOME MADE LIQUIDS ..... A PILL OR SYRUP ..... B INJECTION ..... C (I.V.) INTRAVENOUS ..... D HOME REMEDIES/ HERBAL MEDICINES ..... E OTHER _____ X (SPECIFY)
481	Did you seek advice or treatment for the diarrhea?	YES ..... 1 NO ..... 2 (SKIP TO 483) ←	YES ..... 1 NO ..... 2 (SKIP TO 483) ←
482	Where did you seek advice or treatment for diarrhea? IF SOURCE IS HOSPITAL, HEALTH CENYTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE _____ (NAME OF PLACE) Anywhere else? RECORD ALL SOURCES MENTIONED.	PUBLIC SECTOR GOVT. HOSPITAL ..... A GOVT. HEALTH CENTER ..... B GOVT. HEALTH STATION ..... C OTHER PUBLIC _____ F (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... G PHARMACY ..... H PVT. DOCTOR ..... I COMM. HEALTH WORKER ..... K OTHER PVT. MEDICAL _____ L (SPECIFY) OTHER SOURCE SHOP ..... M TRAD. PRACTITIONER ..... N OTHER _____ X (SPECIFY)	PUBLIC SECTOR GOVT. HOSPITAL ..... A GOVT. HEALTH CENTER ..... B GOVT. HEALTH STATION ..... C OTHER PUBLIC _____ F (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... G PHARMACY ..... H PVT. DOCTOR ..... I COMM. HEALTH WORKER ..... K OTHER PVT. MEDICAL _____ L (SPECIFY) OTHER SOURCE SHOP ..... M TRAD. PRACTITIONER ..... N OTHER _____ X (SPECIFY)
483		GO BACK TO 456 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 483A.	GO BACK TO 456 IN LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 483A.

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
483A	When a child has diarrhea, should he/she be given less to drink than usual, about the same amount, or more than usual?	LESS TO DRINK ..... 1 ABOUT SAME AMOUNT TO DRINK..... 2 MORE TO DRINK..... 3 DON'T KNOW 8	
483B	When a child has diarrhea, should he/she be given less to eat than usual, about the same amount, or more than usual?	LESS TO EAT..... 1 ABOUT SAME AMOUNT TO EAT ..... 2 MORE TO EAT..... 3 DON'T KNOW 8	
483C	When a child is sick with diarrhea, what signs of illness would tell you that he/she should be taken to a health facility or health worker? Anything else? RECORD ALL SIGNS MENTIONED	REPEATED WATERY STOOLS ..... A ANY WATERY STOOLS ..... B REPEATED VOMITING ..... C ANY VOMITING ..... D BLOOD IN STOOLS ..... E FEVER..... F MARKED THIRST..... G NOT EATING/NOT DRINKING WELL..... H GETTING SICKER/VERY SICK ..... I NOT GETTING BETTER ..... J OTHER _____ X (SPECIFY) DON'T KNOW ..... Z	
483D	When a child is sick with cough, what signs of illness would tell you that he/she should be taken to a health facility or health worker? RECORD ALL SIGNS MENTIONED	FAST BREATHING ..... A DIFFICULT BREATHING..... B NOISY BREATHING..... C FEVER..... D UNABLE TO DRINK..... E NOT EATING/ NOT DRINKING WELL..... F GETTING SICKER/VERY SICK ..... G NOT GETTING BETTER ..... H OTHER _____ X (SPECIFY) DON'T KNOW ..... Z	
486	CHECK 478: NOT ASKED ☐ NO CHILD RECEIVED FLUID FROM ORS PACKET ☐ ANY CHILD RECEIVED FLUID FROM ORS PACKET ☐ → 490		
487	Have you ever heard of a special product called ORS you can get for the treatment of diarrhea?	YES..... 1 NO..... 2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
490	Now I would like to ask you some questions about medical care for you yourself. Many different factors can prevent women from getting medical advice or treatment for themselves. When you are sick and want to get medical advice or treatment, is each of the following a big problem or not?	BIG PROBLEM / NOT A BIG PROBLEM	
	Knowing where to go	1 / 2	
	Getting permission to go	1 / 2	
	Getting money needed for treatment	1 / 2	
	The distance to the health facility	1 / 2	
	Having to take transport	1 / 2	
	Not wanting to go alone	1 / 2	
	Concern that there may not be a female health provider	1 / 2	
	Queuing in line for treatment	1 / 2	
	Quality of the health service	1 / 2	
490A	Where is the nearest trained health worker or health institution whom you would try to see if you were having complications during pregnancy labor, delivery or postpartum?	INSIDE VILLAGE/TOWN ..... 1 OUTSIDE VILLAGE/TOWN ..... 2 DON'T KNOW 8	→ 491
490B	What is the type of that health facility? IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. _____ (NAME OF PLACE)	PUBLIC MEDICAL SECTOR GOVT. HOSPITAL ..... 11 GOVT. HEALTH CENTER ..... 12 GOVT. HEALTH STATION ..... 13 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC ..... 21 PHARMACY ..... 22 PVT. DOCTOR ..... 23 COMM. HEALTH WORKER ..... 24 OTHER PVT. MEDICAL _____ 26 (SPECIFY) OTHER PERSON TRAD. BIRTH ATTENDANT ..... 31 OTHER _____ 96 (SPECIFY)	
490C	How long, on the average, would it take to organize transport (traditional or modern facility) to that trained health worker or health institution? RECORD 'MINUTES' IF THE TIME IT TAKES IS LESS THAN ONE HOUR AND 'HOURS' IF IT IS LESS THAN 24 HOURS AND IN 'DAYS' IF ONE OR MORE DAYS.	MINUTES ..... 1 ☐☐ HOURS ..... 2 ☐☐ DAYS ..... 3 ☐☐ NO TRANSPORT FACILITY/ ON FOOT ..... 997 DON'T KNOW 998	
490D	IF CODE '997' CIRCLED IN 490C ASK: How long on the average would it take to reach that trained health worker or health institution on foot? FOR OTHER RESPONSES ASK: How long on the average, once you have arranged transport, would it take to reach that trained health worker or health institution? RECORD 'MINUTES' IF THE TIME IT TAKES IS LESS THAN ONE HOUR AND 'HOURS' IF IT IS LESS THAN 24 HOURS AND IN 'DAYS' IF ONE OR MORE DAYS.	MINUTES ..... 1 ☐☐ HOURS ..... 2 ☐☐ DAYS ..... 3 ☐☐ DON'T KNOW 998	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
490E	Once you arrive at a health facility or trained health worker, how long does it take to receive health care service?	MINUTES ..... ☐☐☐ NO WAIT 996	
491	CHECK 27 IN THE HOUSEHOLD QUESTIONNAIRE BED NETS IN THE HOUSEHOLD? YES ☐ NO ☐		→ 501
492	Do you usually sleep under a mosquito net?	YES ..... 1 NO 2	
493	Did you sleep under a mosquito net last night?	YES ..... 1 NO 2	→ 495
494	CHECK 492: "YES" CIRCLED ☐ "YES" NOT CIRCLED ☐		→ 501
495	Now let us talk about the mosquito net you sleep under. How long ago was the mosquito net bought or obtained? IF LESS THAN ONE MONTH, RECORD '00'. IF MORE THAN 95 MONTHS, RECORD '95'.	MONTHS ..... ☐☐ DON'T KNOW 98	
496	Since you got the mosquito net, was it ever soaked or dipped in a liquid to repel mosquitoes or bugs?	YES ..... 1 NO ..... 2 DON'T KNOW 8	→ 501
497	How long ago was the mosquito net last soaked or dipped? IF LESS THAN 1 MONTH, RECORD '00'. IF MORE THAN 95 MONTHS, RECORD '95'.	MONTHS ..... ☐☐ DON'T KNOW 98	

SECTION 5. MARRIAGE AND SEXUAL ACTIVITY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
501	Are you currently married or living with a man?	YES, CURRENTLY MARRIED ..... 1 YES, LIVING WITH A MAN ..... 2 NO, NOT IN UNION 3	→ 505
501A	Do you currently have a regular sexual partner, an occasional sexual partner, or no sexual partner at all?	REGULAR SEXUAL PARTNER ..... 1 OCCASIONAL SEXUAL PARTNER ..... 2 NO SEXUAL PARTNER 3	
502	Have you ever been married or lived with a man?	YES, FORMERLY MARRIED ..... 1 YES, LIVED WITH A MAN ..... 2 NO 3	→ 510 → 514
504	What is your marital status now: are you widowed, divorced, or separated?	WIDOWED ..... 1 DIVORCED ..... 2 SEPARATED 3	→ 510
505	Is your husband/partner living with you now or is he staying elsewhere?	LIVING WITH HER ..... 1 STAYING ELSEWHERE 2	→ 506
505A	When was the last time you were living with your husband/partner together? IF LESS THAN A MONTH RECORD '00' IN MONTHS BOX. RECORD 'MONTHS AGO' IF LESS THAN A YEAR, OTHERWISE RECORD 'YEARS AGO'.	MONTHS AGO ..... 1 ☐☐ YEARS AGO ..... 2 ☐☐	
506	RECORD THE HUSBAND/PARTNER'S NAME AND LINE NUMBER FROM THE HOUSEHOLD QUESTIONNAIRE. IF HE IS NOT LISTED IN THE HOUSEHOLD, RECORD '00'.	NAME _____ LINE NUMBER ..... ☐☐	
507	Does your husband/partner have any other wives besides yourself?	YES ..... 1 NO ..... 2 DON'T KNOW 8	→ 510
508	How many other wives does he have?	NUMBER ..... ☐☐ DON'T KNOW 98	→ 510
509	Are you his first, second… wife?	RANK ..... ☐☐	
510	Have you been married or lived with a man only once, or more than once?	ONCE ..... 1 MORE THAN ONCE 2	
511	CHECK 510: MARRIED/LIVED WITH A MAN ONLY ONCE ☐ → In what month and year did you start living with your husband/partner? MARRIED/LIVED WITH A MAN MORE THAN ONCE ☐ → Now we will talk about your first husband/partner. In what month and year did you start living with him?	MONTH ..... ☐☐ DON'T KNOW MONTH ..... 98 YEAR ..... ☐☐☐☐ DON'T KNOW YEAR 9998	→ 514
512	How old were you when you started living with him?	AGE ..... ☐☐	
514	Now I need to ask you some questions about sexual activity in order to gain a better understanding of some family life issues. How old were you when you first had sexual intercourse (if ever)?	NEVER ..... 00 AGE IN YEARS ..... ☐☐ FIRST TIME WHEN STARTED LIVING WITH (FIRST) HUSBAND/PARTNER 95	→ 524

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
515	When was the last time you had sexual intercourse? RECORD 'YEARS AGO' ONLY IF LAST INTERCOURSE WAS ONE OR MORE YEARS AGO. IF 12 MONTHS OR MORE, ANSWER MUST BE RECORDED IN YEARS.	DAYS AGO ..... 1 ☐☐ WEEKS AGO..... 2 ☐☐ MONTHS AGO ..... 3 ☐☐ YEARS AGO ..... 4 ☐☐	→ 524
516	CHECK 301 AND 301A: KNOWS CONDOM ☐ → The last time you had sex, was condom used? DOES NOT KNOW CONDOM ☐ → Some men use a condom, which means that they put a rubber sheath during sexual intercourse. The last time you had sex, was condom used?	YES..... 1 NO ..... 2 DON'T KNOW 8	
524	Do you know of a place where a person can get condoms?	YES..... 1 NO 2	→ 601
525	Where is that? IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. _____ (NAME OF PLACE) Any other place? RECORD ALL SOURCES MENTIONED.	PUBLIC SECTOR GOVT. HOSPITAL ..... A GOVT. HEALTH CENTER..... B FAMILY PLANNING CLINIC ..... C OTHER PUBLIC _____ F (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC..... G PHARMACY ..... H PRIVATE DOCTOR ..... I OTHER PRIVATE MEDICAL _____ L (SPECIFY) OTHER PRIVATE SECTOR SHOP ..... M FRIEND/RELATIVE ..... N OTHER _____ X (SPECIFY)	

SECTION 6. FERTILITY PREFERENCES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
601	CHECK 311/311A: NEITHER STERILIZED ☐ ↓ HE OR SHE STERILIZED ☐ →		614
602	CHECK 226: NOT PREGNANT OR UNSURE ☐ ↓ Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any(more) children? PREGNANT ☐ ↓ Now I have some questions about the future. After the child you are expecting now, would you like to have another child, or would you prefer not to have any more children?	HAVE (A/ANOTHER) CHILD ..... 1 NO MORE/NONE ..... 2 → SAYS SHE CAN'T GET PREGNANT ..... 3 → UNDECIDED/DON'T KNOW ..... 8 →	 604 614 608
603	CHECK 226: NOT PREGNANT OR UNSURE ☐ ↓ How long would you like to wait from now before the birth of (a/another) child? PREGNANT ☐ ↓ After the birth of the child you are expecting now, how long would you like to wait before the birth of another child?	MONTHS ..... 1 ☐☐ YEARS ..... 2 ☐☐ SOON/NOW ..... 993 → SAYS SHE CAN'T GET PREGNANT ..... 994 → AFTER MARRIAGE ..... 995 OTHER _____ 996 → (SPECIFY) DON'T KNOW 998	 609 614 609
604	CHECK 226: NOT PREGNANT OR UNSURE ☐ ↓ PREGNANT ☐ →		610
605	CHECK 310: USING A CONTRACEPTIVE METHOD? NOT ASKED ☐ ↓ NOT CURRENTLY USING ☐ ↓ YES CURRENTLY USING ☐ →		608
606	CHECK 603: NOT ASKED ☐ ↓ 24 OR MORE MONTHS OR 2 OR MORE YEARS ☐ ↓ < 24 MONTHS ☐ →		610

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
607	CHECK 606: 24 OR MORE MONTHS ☐ → You have said that you do not want (a/another) child soon, but you are not using any method to avoid pregnancy. Can you tell me why? Any other reason? RECORD ALL REASONS MENTIONED NOT ASKED ☐ → You have said that you do not want any (more) children, but you are not using any method to avoid pregnancy. Can you tell me why? Any other reason?	NOT MARRIED ..... A FERTILITY-RELATED REASONS NOT HAVING SEX ..... B INFREQUENT SEX ..... C MENOPAUSAL/HYSTERECTOMY ..... D SUBFECUND/INFECUND ..... E POSTPARTUM AMENORRHEIC ..... F BREASTFEDING ..... G FATALISTIC ..... H OPPOSITION TO USE RESPONDENT OPPOSED ..... I HUSBAND OPPOSED ..... J OTHERS OPPOSED ..... K RELIGIOUS PROHIBITION ..... L LACK OF KNOWLEDGE KNOWS NO METHOD ..... M KNOWS NO SOURCE ..... N METHOD-RELATED REASONS HEALTH CONCERNS ..... O FEAR OF SIDE EFFECTS ..... P LACK OF ACCESS/TOO FAR ..... Q COST TOO MUCH ..... R INCONVENIENT TO USE ..... S INTERFERES WITH BODY'S NORMAL PROCESSES ..... T OTHER _____ X (SPECIFY) DON'T KNOW ..... Z	
608	In the next few weeks, if you discovered that you were pregnant, would that be a big problem, small problem or no problem for you?	BIG PROBLEM ..... 1 SMALL PROBLEM ..... 2 NO PROBLEM 3	
609	CHECK 310: USING A CONTRACEPTIVE METHOD? NOT ASKED ☐ → NOT CURRENTLY USING ☐ → YES CURRENTLY USING ☐ → 614		
610	Do you think you will use a method to delay or avoid pregnancy within the next 12 months?	YES ..... 1 NO ..... 2 DON'T KNOW 8	→ 611
610A	Do you think you will use a contraceptive method to delay or avoid pregnancy at any time in the future?	YES ..... 1 NO ..... 2 DON'T KNOW 8	→ 612

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
611	Which contraceptive method would you prefer to use?	FEMALE STERILIZATION ..... 01 MALE STERILIZATION ..... 02 PILL ..... 03 IUD ..... 04 INJECTIONS ..... 05 IMPLANTS ..... 06 CONDOM ..... 07 FEMALE CONDOM ..... 08 DIAPHRAGM ..... 09 FOAM/JELLY ..... 10 LACT.AMEN. METHOD ..... 11 PERIODIC ABSTINENCE ..... 12 WITHDRAWAL ..... 13 OTHER _____ 96 (SPECIFY) UNSURE 98	→ 614
612	What is the main reason that you think you will not use a contraceptive method at any time in the future?	NOT MARRIED ..... 11 FERTILITY-RELATED REASONS INFREQUENT SEX/NO SEX ..... 21 MENOPAUSAL/HYSTERECTOMY ..... 22 SUBFECUND/INFECUND ..... 23 WANTS AS MANY CHILDREN AS POSSIBLE ..... 24 OPPOSITION TO USE RESPONDENT OPPOSED ..... 31 HUSBAND OPPOSED ..... 32 OTHERS OPPOSED ..... 33 RELIGIOUS PROHIBITION ..... 34 LACK OF KNOWLEDGE KNOWS NO METHOD ..... 41 KNOWS NO SOURCE ..... 42 METHOD-RELATED REASONS HEALTH CONCERNS ..... 51 FEAR OF SIDE EFFECTS ..... 52 LACK OF ACCESS/TOO FAR ..... 53 COST TOO MUCH ..... 54 INCONVENIENT TO USE ..... 55 INTERFERES WITH BODY'S NORMAL PROCESSES ..... 56 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	→ 614
613	Would you ever use a contraceptive method if you were married?	YES ..... 1 NO ..... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
614	CHECK 216: HAS LIVING CHILDREN ☐ → If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be? NO LIVING CHILDREN ☐ → If you could choose exactly the number of children to have in your whole life, how many would that be? PROBE FOR A NUMERIC RESPONSE.	NUMBER ☐☐ DON'T WANT ANY CHILD ..... 00 OTHER _____ 96 (SPECIFY)	→ 615A
615	How many of these children would you like to be boys, how many would you like to be girls and for how many would the sex not matter?	BOYS GIRLS EITHER NUMBER.... ☐☐ ☐☐ ☐☐ OTHER _____ 96 (SPECIFY)	
615A	What do you think is the best number of months or years between the birth of one child and the birth of next child?	YEARS ..... 1 ☐☐ MONTHS ..... 2 ☐☐ OTHER _____ 996 (SPECIFY) DON'T KNOW _____ 998	
615B	How long should a couple wait before starting sexual intercourse after the birth of a baby?	MONTHS ..... ☐☐ OTHER _____ 96 (SPECIFY) DON'T KNOW _____ 98 (SPECIFY)	
615C	Should a mother wait until she has completely stopped breastfeeding before starting to have sexual relations again, or it doesn't matter?	WAIT ..... 1 DOESN'T MATTER 2	
616	Would you say that you approve or disapprove of couples using a method to avoid getting pregnant?	APPROVE ..... 1 DISAPPROVE ..... 2 NO OPINION 3	
616A	Is it acceptable or not acceptable to you for information on family planning to be provided:	ACCEPTABLE / NOT ACCEPTABLE / DK RADIO ..... 1 2 8 TELEVISION 1 2 8	
	On the radio? On the television?		
617	In the last 12 months have you heard about family planning:	YES NO RADIO ..... 1 2 TELEVISION ..... 1 2 NEWSPAPER OR MAGAZINE ..... 1 2 POSTER ..... 1 2 LEAFLETS OR BROCHURES 1 2	
	On the radio? On the television? In a newspaper or magazine? From a poster? From leaflets or brochures?		
619	In the last 12 months, have you discussed the practice of family planning with your friends, neighbors, or relatives?	YES ..... 1 NO 2	→ 621

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
620	With whom have you discussed? Anyone else? RECORD ALL PERSONS MENTIONED.	HUSBAND/PARTNER ..... A MOTHER ..... B FATHER ..... C SISTER (S) ..... D BROTHER (S) ..... E DAUGHTER(S) ..... F SON(S) ..... G MOTHER-IN-LAW ..... H FATHER-IN-LAW ..... I FRIENDS/NEIGHBORS ..... J OTHER _____ X (SPECIFY)	
621	CHECK 501: YES, CURRENTLY MARRIED ☐ ↓ YES, LIVING WITH A MAN ☐ ↓ NO, NOT IN UNION ☐ → 701		
622	Spouse/partners don't always agree on every thing. Now I want to ask you about your husband's/partner's views on family planning. Do you think that your husband/partner approves or disapproves of couples using a method to avoid pregnancy?	APPROVES ..... 1 DISAPPROVES ..... 2 DON'T KNOW 8	
623	How often have you talked to your husband/partner about family planning in the last 12 months?	NEVER ..... 1 ONCE OR TWICE ..... 2 MORE OFTEN 3	
624	Do you think your husband/partner wants the same number of children that you want, or does he want more or fewer than you want?	SAME NUMBER ..... 1 MORE CHILDREN ..... 2 FEWER CHILDREN ..... 3 DON'T KNOW 8	
625	CHECK 311/311A: ANY CODE CIRCLED ☐ ↓ NO CODE CIRCLED ☐ → 701		
626	You have told me that you are currently using contraception. Would you say that using contraception is mainly your decision, mainly your husband's/partner's decision or did you both decide together?	MAINLY RESPONDENT ..... 1 MAINLY HUSBAND/PARTNER ..... 2 JOINT DECISION ..... 3 OTHER _____ 6 (SPECIFY)	

SECTION 7A. HUSBAND'S BACKGROUND AND WOMAN'S WORK

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
701	CHECK 501 AND 502: CURRENTLY MARRIED/ LIVING WITH A MAN ☐ ↓ FORMERLY MARRIED/ LIVED WITH A MAN ☐ → 702A NEVER MARRIED AND NEVER LIVED WITH A MAN ☐ → 707		
702	How old was your husband/partner on his last birthday?	AGE IN COMPLETED YEARS..... ☐☐	
702A	Can your (last) husband/partner read and write in any language with out any difficulty?	YES ..... 1 NO 2	
703	Did your (last) husband/partner ever attend school?	YES ..... 1 NO ..... 2 → 706	
704	What was the highest level of school he attended: primary/elementary, middle, secondary, or higher?	PRIMARY ..... 1 MIDDLE ..... 2 SECONDARY ..... 3 HIGHER ..... 4 DON'T KNOW ..... 8 → 706	
705	What was the highest grade he completed at that level?	GRADE..... ☐☐ DON'T KNOW 98	
706	CHECK 701: CURRENTLY MARRIED/ LIVING WITH A MAN ☐ ↓ What is your husband's/partner's occupation? That is, what kind of work does he mainly do? FORMERLY MARRIED/ LIVED WITH A MAN ☐ ↓ What was your (last) husband's/ partner's occupation? That is, what kind of work did he mainly do?	■■ _____ _____ _____	
707	Aside from your own housework, are you currently working?	YES ..... 1 → 710 NO 2	
708	As you know, some women take up jobs for which they are paid in cash or kind. Others sell things, have a small business or work on the family farm or in the family business. Are you currently doing any of these things or any other work?	YES ..... 1 → 710 NO 2	
709	Have you done any work in the last 12 months?	YES ..... 1 NO ..... 2 → 724	
710	What is your usual occupation, that is, what kind of work do you mainly do?	■■ _____ _____ _____	
711	CHECK 710: WORKS IN AGRICULTURE ☐ ↓ DOES NOT WORK IN AGRICULTURE ☐ → 713		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
712	Do you work mainly on your own land or on family land, or do you work on land that you rent from someone else, or do you work on someone else's land?	OWN LAND ..... 1 FAMILY LAND ..... 2 RENTED LAND ..... 3 SOMEONE ELSE'S LAND 4	
713	Do you do this work for a member of your family, for someone else, or are you self-employed?	FOR FAMILY MEMBER ..... 1 FOR SOMEONE ELSE ..... 2 SELF-EMPLOYED 3	
714	Do you usually work at home or away from home?	HOME ..... 1 AWAY 2	
715	Do you usually work throughout the year, or do you work seasonally, or only once in a while?	THROUGHOUT THE YEAR ..... 1 SEASONALLY/PART OF THE YEAR ..... 2 ONCE IN A WHILE 3	
716	Are you paid or do you earn in cash or kind for this work or are you not paid at all?	CASH ONLY ..... 1 CASH AND KIND ..... 2 IN KIND ONLY ..... 3 NOT PAID 4	→ 722
721	CHECK 501: YES, CURRENTLY MARRIED YES, LIVING WITH A MAN ☐ → Who mainly decides how the money you earn will be used: you, your husband/partner, you and your husband/partner jointly, someone else, or you and someone else jointly? NO, NOT IN UNION ☐ → Who mainly decides how the money you earn will be used: You, someone else, or you and someone else jointly?	RESPONDENT DECIDES ..... 1 HUSBAND/PARTNER DECIDES ..... 2 JOINTLY WITH HUSBAND/PARTNER ..... 3 SOMEONE ELSE DECIDES ..... 4 JOINTLY WITH SOMEONE ELSE 5	
722	CHECK 217 AND 218: A CHILD AGE 5 OR LESS AND LIVING AT HOME? YES ☐ NO ☐ → 724 _____ (WRITE NAME OF THE YOUNGEST CHILD)		
723	Who usually takes care of (NAME OF YOUNGEST CHILD AT HOME) while you are working?	RESPONDENT ..... 01 HUSBAND/PARTNER ..... 02 OLDER FEMALE CHILD ..... 03 OLDER MALE CHILD ..... 04 OTHER RELATIVES ..... 05 NEIGHBORS ..... 06 FRIENDS ..... 07 SERVANTS/HIRED HELP ..... 08 CHILD IS IN SCHOOL ..... 09 INSTITUTIONAL CHILDCARE ..... 10 HAS NOT WORKED SINCE LAST BIRTH ..... 95 OTHER _____ 96 (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES						SKIP
724	Who in the family usually has the final say on the following decisions?	RESPONDENT	HUSBAND/PARTNER	RESPONDENT& HUSBAND/PARTNER JOINTLY	SOMEONE ELSE	RESPONDENT & SOMEONE ELSE JOINTLY	DECISION NOT MADE/NOT APPLICABLE	
	Your own health care?	1	2	3	4	5	6	
	Making large household purchases?	1	2	3	4	5	6	
	Making household purchases for daily needs?	1	2	3	4	5	6	
	Visits to family or relatives?	1	2	3	4	5	6	
	What food should be cooked each day?	1	2	3	4	5	6	
	Assisting your family?	1	2	3	4	5	6	
724A	Sometimes a husband is annoyed or angered by things that his wife does. In your opinion, is a husband justified in hitting or beating his wife in the following situations:				YES	NO	DK	
	If she goes out without telling him?	GOES OUT			1	2	8	
	If she neglects the children?	NEGL. CHILDREN			1	2	8	
	If she argues with him?	ARGUES			1	2	8	
	If she refuses to have sex with him?	REFUSES SEX			1	2	8	
	If she burns the food?	BURNS FOOD			1	2	8	

SECTION 7B FEMALE CIRCUMCISION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
725	Have you ever heard of female circumcision?	YES ..... 1 NO 2	→ 725B
725A	In a number of countries, there is a practice in which a girl may have a part of her genitals cut. Have you ever heard about this practice?	YES ..... 1 NO 2	→ 801
725B	Have you yourself ever been circumcised/ had your genitals cut?	YES ..... 1 NO 2	→ 729
726	Now I Would like to ask you what was done to you at this time? Was any flesh removed from the genital area?	YES ..... 1 NO ..... 2 DON'T KNOW 8	→ 726B
726A	Was the genital area just nicked without removing any flesh?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
726B	Was your genital area sewn closed?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
727	How old were you when you were circumcised? PROBE FOR A NUMERIC ANSWER BEFORE CIRCLING DON'T KNOW	AGE DAYS ..... 1 ☐☐ MONTHS ..... 2 ☐☐ YEARS ..... 3 ☐☐ DON'T KNOW 998	
728	Who performed the circumcision?	DOCTOR ..... 1 TRAINED NURSE/MIDWIFE ..... 2 TRADITIONAL MIDWIFE ..... 3 CIRCUMCISION PRACTITIONER ..... 4 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	
729	CHECK 214 AND 217: HAS AT LEAST ONE LIVING DAUGHTER ☐	HAS NO LIVING DAUGHTER ☐	→ 734
730	Have any of your alive daughters been circumcised/had her genitals cut? IF YES: How many?	NUMBER CIRCUMCISED ..... ☐☐ NO DAUGTHER CIRCUMCISED 95	→ 734
730A	IF ONLY ONE DAUGHTER IN Q730 ASK: What is her name? _____ (DAUGHTER'S NAME) IF MORE THAN ONE DAUGHTER IN Q730 ASK: To which of your daughters did this happen most recently? _____ (DAUGHTER'S NAME) INTERVIEWER: CHECK 212 AND RECORD THE LINE NUMBER FOR THE DAUGHTER	DAUGHTER'S LINE NUMBER FROM 212 ..... ☐☐	
730B	Now I would like to ask you what was done to her at this time? Was any flesh removed from the genital area?	YES ..... 1 NO ..... 2 DON'T KNOW 8	→ 730D
730C	Was the genital area just nicked without removing any flesh?	YES ..... 1 NO ..... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
730D	Was her genital area sewn closed?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
731	How old was she when she was circumcised? PROBE FOR A NUMERIC ANSWER BEFORE CIRCLING DON'T KNOW	AGE DAYS ..... 1 ☐☐ MONTHS ..... 2 ☐☐ YEARS ..... 3 ☐☐ DON'T KNOW 998	
732	Who performed the circumcision?	DOCTOR ..... 1 TRAINED NURSE/MIDWIFE ..... 2 TRADITIONAL MIDWIFE ..... 3 CIRCUMCISION PRACTITIONER ..... 4 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	
733	Did you or any one object to her being circumcised? IF YES: Who was that? Any one else? RECORED ALL PERSONS MENTIONED	RESPONDENT ..... A RESPONDENT'S HUSBAND ..... B RESPONDENT'S MOTHER ..... C RESPONDENT'S MOTHER-IN-LAW ..... D OTHER RELATIVE OF RESPONDENT ... E OTHERS _____ X (SPECIFY) NO ONE ..... Y	
734	CHECK 514: HAD SEX ☐ NEVER HAD SEX ☐ → 739		
735	CHECK 725B: CIRCUMCISED ☐ NOT CIRCUMCISED ☐ → 739		
736	CHECK 210: ONE OR MORE BIRTHS ☐ NO BIRTH ☐ → 738		
737	Did you have any health problems or other complications during delivery because of your circumcision?	YES ..... 1 NO ..... 2 → 738	
737A	What did you do in case of health problems and complications during delivery?	WENT TO HEALTH INSTITUTION ..... 1 WENT TO TRADITIONAL HEALER ..... 2 NOTHING ..... 3 OTHER _____ 6 (SPECIFY)	
738	Did you have any health problems or other complications during sexual relations because of your circumcision?	YES ..... 1 NO ..... 2 → 739	
738A	What did you do in case of health problems and complications during sexual relations?	WENT TO HEALTH INSTITUTION ..... 1 WENT TO TRADITIONAL HEALER ..... 2 NOTHING ..... 3 OTHER _____ 6 (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
739	What benefits do girls themselves get if they undergo genital cutting? PROBE: Any other benefits? RECORD ALL BENEFITS MENTIONED	CLEANLINESS/HYGINE ..... A SOCIAL ACCEPTANCE ..... B BETTER MARRIAGE PROSPECTS ..... C PRESERVE VIRGINITY/PREVENT PREMARITAL SEX ..... D MORE SEXUAL PLEASURE FOR THE MAN ..... E RELIGIOUS APPROVAL ..... F OTHER _____ X (SPECIFY) NO BENEFITS ..... Y	
740	What benefits do girls themselves get if they don't undergo genital cutting? PROBE: Any other benefits? RECORD ALL BENEFITS MENTIONED	FEWER MEDICAL PROBLEMS ..... A AVOIDING PAIN ..... B MORE SEXUAL PLEASURE FOR HER ..... C MORE SEXUAL PLEASURE FOR THE MAN ..... D FOLLOWS RELIGION ..... E OTHER _____ X (SPECIFY) NO BENEFITS ..... Y	
741	Would you say that this practice is a way to prevent a girl from having sex before marriage or does have no effect on premarital sex?	PREVENT SEX ..... 1 NO EFFECT ..... 2 DON'T KNOW 8	
742	Do you believe that this practice is required by your religion?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
742A	Do you think that this practice should be continued, or should it be discontinued?	CONTINUED ..... 1 DISCONTINUED ..... 2 DEPENDS ..... 3 DON'T KNOW 8	
742B	Do you think that men want this practice to be continued, or discontinued?	CONTINUED ..... 1 DISCONTINUED ..... 2 DEPENDS ..... 3 DON'T KNOW 8	
743	CHECK 501: CURRENTLY MARRIED/ LIVING WITH A MAN ☐ ↓ NO, NOT IN UNION ☐ → 745		
744	Does your husband/partner think female circumcision should be continued or discontinued?	CONTINUED ..... 1 DISCONTINUED ..... 2 DON'T KNOW 8	
745	Have there been any activities against female circumcision arranged in this area?	YES ..... 1 NO ..... 2 DON'T KNOW ..... 8 → 801	
746	Please describe the activities?	DESCRIPTION OF THE ACTIVITIES _____ _____ _____	

SECTION 8: AIDS AND OTHER SEXUALLY TRANSMITTED DISEASES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
801	Now I would like to talk about something else. Have you ever heard of an illness called AIDS?	YES ..... 1 NO 2	→ 817
801A	From which sources of information have you learned most about AIDS? Any other sources? RECORD ALL SOURCES MENTIONED	RADIO ..... A TV ..... B NEWS PAPERS/MAGAZINES ..... C PAMPHLETS/POSTERS ..... D HEALTH WORKERS ..... E MOSQUES/CHURCHES ..... F SCHOOLS/TEACHERS ..... G COMMUNITY MEETINGS ..... H FRIENDS/RELATIVES ..... I WORK PLACE ..... J OTHER _____ X (SPECIFY)	
802	Is there anything a person can do to avoid getting AIDS or the virus that causes AIDS?	YES ..... 1 NO ..... 2 DON'T KNOW 8	→ 804
803	What can a person do to avoid getting AIDS? Anything else? RECORD ALL WAYS MENTIONED.	ABSTAIN FROM SEX ..... A USE CONDOMS ..... B LIMIT SEX TO ONE PARTNER/STAY FAITHFUL TO ONE PARTNER ..... C LIMIT NUMBER OF SEXUAL PARTNERS ..... D AVOID SEX WITH PROSTITUTES ..... E AVOID SEX WITH PERSONS WHO HAVE MANY PARTNERS ..... F AVOID SEX WITH HOMOSEXUALS ..... G AVOID SEX WITH PERSONS WHO INJECT DRUGS INTRAVENOUSLY ..... H AVOID BLOOD TRANSFUSIONS ..... I AVOID INJECTIONS ..... J AVOID SHARING RAZORS/BLADES ..... K AVOID KISSING ..... L AVOID MOSQUITO BITES ..... M SEEK PROTECTION FROM TRADITIONAL HEALER ..... N OTHER _____ W (SPECIFY) OTHER _____ X (SPECIFY) DON'T KNOW ..... Z	
804	Can people reduce their chances of getting the AIDS virus by having just one sex partner who has no other partners?	YES ..... 1 NO ..... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
805	Can a person get the AIDS virus from mosquito bites?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
806	Can people reduce their chances of getting the AIDS virus by using a condom every time they have sex?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
807	Can people get the AIDS virus by sharing food with a person who has AIDS?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
809	Is it possible for a healthy-looking person to have the AIDS virus?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
809A	Do you think that persons with AIDS almost never die from the disease, sometimes die, or almost always die?	ALMOST NEVER ..... 1 SOMETIMES ..... 2 ALMOST ALWAYS ..... 3 DON'T KNOW 8	
809B	Can AIDS be cured?	YES ..... 1 NO ..... 2 DON'T KNOW 8	
809C	Do you think your chance of getting AIDS is small, moderate, great, or no risk at all?	SMALL ..... 1 MODERATE ..... 2 GREAT ..... 3 NO RISK AT ALL ..... 4 HAS AIDS 5	→ 809E → 809F
809D	Why do you think that you have no or small risk of getting AIDS? Any other reasons? RECORD ALL REASONS MENTIONED	ABSTAIN FROM SEX ..... A USE CONDOMS ..... B HAVE ONLY ONE SEX PARTNER ..... C LIMITED NUMBER OF SEX PARTNERS ..... D SPOUSE HAS NO OTHER PARTNER ..... E NO HOMOSEXUAL CONTACT ..... F NO BLOOD TRANSFUSIONS ..... G NO INJECTIONS ..... H OTHER _____ X (SPECIFY)	→ 809F
809E	Why do you think that you have moderate/great risk of getting AIDS? Any other reasons? RECORD ALL REASONS MENTIONED	DO NOT USE CONDOMS ..... A MORETHAN ONE SEX PARTNER ..... B SPOUSE HAS OTHER PARTNER (S) ..... C HAD HOMOSEXUAL CONTACT ..... D HAD BLOOD TRANSFUSION ..... E HAD INJECTIONS ..... F OTHER _____ X (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
809F	Since you heard of AIDS, have you changed your behavior to prevent getting AIDS? If YES: What did you do? Any thing else? RECORD ALL CHANGES MENTIONED	DIDN'T START SEX ..... A STOPPED ALL SEX ..... B STARTED USING CONDOMS ..... C RESTRICTED SEX TO ONE PARTNER ..... D REDUCED NUMBER OF SEX PARTNERS ..... E AVOID SEX WITH PROSTITUTES ..... F ASK SPOUSE TO BE FAITHFUL ..... G NO MORE HOMOSEXUAL CONTACTS ..... H STOPPED INJECTIONS ..... I OTHER _____ W (SPECIFY) OTHER _____ X (SPECIFY) NO BEHAVIOR CHANGE ..... Y	→810
809G	Has your knowledge of AIDS influenced or changed your decisions about having sex or your sexual behavior? If YES, in what way? RECORD ALL CHANGES MENTIONED	DIDN'T START SEX ..... A STOPPED ALL SEX ..... B STARTED USING CONDOMS ..... C RESTRICTED SEX TO ONE PARTNER ..... D REDUCED NUMBER OF SEX PARTNERS ..... E AVOID SEX WITH PROSTITUTES ..... F NO MORE HOMOSEXUAL CONTACTS ..... G OTHER _____ X (SPECIFY) NO CHANGE IN SEXUAL BEHAVIOR ..... Y	
810	Do you know someone personally who has the virus that causes AIDS?	YES ..... 1 NO 2	
810A	Do you know someone personally who died from AIDS?	YES ..... 1 NO 2	
811	Can the virus that causes AIDS be transmitted from a mother to a child?	YES ..... 1 NO ..... 2 DON'T KNOW 8	→ 813
812	When can the virus that causes AIDS be transmitted from a mother to a child?	YES NO DK During pregnancy? ..... DURING PREG ..... 1 2 8 During delivery? ..... DURING DELIVERY .... 1 2 8 By breastfeeding? ..... BREASTFEEDING 1 2 8	
813	CHECK 501: CURRENTLY MARRIED/ LIVING WITH A MAN ☐ ↓ NO, NOT IN UNION ☐ → 815		
814	Have you ever talked about ways to prevent getting the virus that causes AIDS with (your husband/the man you are living with)?	YES ..... 1 NO 2	
815	If a member of your family got infected with the virus that causes AIDS, would you want it to remain a secret or not?	YES ..... 1 NO ..... 2 DK/NOT SURE 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
816	If a relative of yours became sick with the virus that causes AIDS, would you be willing to care for her or him in your own household?	YES ..... 1 NO ..... 2 DK/NOT SURE/DEPENDS 8	
817	Apart from AIDS, have you heard about other infections that can be transmitted through sexual contact?	YES ..... 1 NO 2	→819A
817A	Which diseases do you know? RECORD ALL DISEASES MENTIONED	SYPHILIS ..... A GONORRHEA ..... B GENITAL WARTS/CONDYLOMATA ..... C OTHER _____ D (SPECIFY) OTHER _____ X (SPECIFY) DON'T KNOW ..... Z	
818	If a man has a sexually transmitted disease, what symptoms might he have? Any others? RECORD ALL SYMPTOMS MENTIONED.	ABDOMINAL PAIN ..... A GENITAL DISCHARGE/DRIPPING ..... B FOUL SMELLING DISCHARGE ..... C BURNING PAIN ON URINATION ..... D REDNESS/INFLAMMATION IN GENITAL AREA ..... E SWELLING IN GENITAL AREA ..... F GENITAL SORES/ULCERS ..... G GENITAL WARTS ..... H GENITAL ITCHING ..... I BLOOD IN URINE ..... J LOSS OF WEIGHT ..... K IMPOTENCE ..... L OTHER _____ W (SPECIFY) OTHER _____ X (SPECIFY) NO SYMPTOMS ..... Y DON'T KNOW ..... Z	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
819	If a woman has a sexually transmitted disease, what symptoms might she have? Any others? RECORD ALL SYMPTOMS MENTIONED.	ABDOMINAL PAIN ..... A GENITAL DISCHARGE ..... B FOUL SMELLING DISCHARGE ..... C BURNING PAIN ON URINATION ..... D REDNESS/INFLAMMATION IN GENITAL AREA ..... E SWELLING IN GENITAL AREA ..... F GENITAL SORES/ULCERS ..... G GENITAL WARTS ..... H GENITAL ITCHING ..... I BLOOD IN URINE ..... J LOSS OF WEIGHT ..... K HARD TO GET PREGNANT/ HAVE A CHILD ..... L OTHER _____ W (SPECIFY) OTHER _____ X (SPECIFY) NO SYMPTOMS ..... Y DON'T KNOW ..... Z	
819A	CHECK 514: HAS HAD SEXUAL INTERCOURSE ☐ HAS NOT HAD SEXUAL INTERCOURSE ☐ → 821		
820	We may already have talked about this. Have you ever used a condom during sex to avoid getting or transmitting diseases, such as AIDS?	YES ..... 1 NO 2	
821	RECORD THE TIME	HOUR ..... ☐☐ MINUTES ..... ☐☐	

THANK YOU! **THANK YOU!!!**

THANK YOU!!

INTERVIEWER'S OBSERVATIONS

TO BE FILLED IN AFTER COMPLETING INTERVIEW

COMMENTS ABOUT RESPONDENT:

COMMENTS ON SPECIFIC QUESTIONS:

ANY OTHER COMMENTS:

SUPERVISOR'S OBSERVATIONS

NAME OF THE SUPERVISOR: _____ DATE: _____/_____/_____

EDITOR'S OBSERVATIONS

NAME OF THE EDITOR: _____ DATE: _____/_____/_____