Kyrgyz Republic

Demographic and Health Survey 1997

<u>World Summit for Children Indicators: Kyrgyz Republic 1997</u>

		Value
BASIC INDICATORS		
Childhood mortality	Infant mortality rate	61 per 1,000
	Under-five mortality rate	72 per 1,000
Maternal mortality	Maternal mortality ratio	72 per 100,000[1]
Childhood undernutrition	Percent stunted (of children under 3 years)	24.8
	Percent wasted (of children under 3 years)	3.4
	Percent underweight (of children under 3 years)	11.0
Clean water supply	Percent of households within 15 minutes of a safe water supply[2]	69.2
Sanitary excreta disposal	Percent of households with flush toilets or VIP latrines	22.9
Basic education	Percent of women 15-49 with completed primary education	99.1
	Percent of men 15-49 with completed primary education	99.2
	Percent of girls 6-12 attending school	82.3
	Percent of boys 6-12 attending school	83.8
	Percent of women 15-49 who are literate	99.6
Children in especially difficult situations	Percent of children who are orphans (both parents dead)	0.1
	Percent of children who do not live with their natural mother	6.7
	Percent of children who live in single adult households	2.6
SUPPORTING INDICATORS		

Women's Health

Birth spacing	Percent of births within 24 months of a previous birth[3]	29.6
Safe motherhood	Percent of births with medical antenatal care	97.4
	Percent of births with antenatal care in first trimester	72.2
	Percent of births with medical assistance at delivery	98.1
	Percent of births in a medical facility	95.8
	Percent of births at high risk	43.3
Family planning	Contraceptive prevalence rate (any method, married women)	59.5
	Percent of currently married women with an unmet demand for family planning	11.6
	Percent of currently married women with an unmet need for family planning to avoid a high-risk birth	10.0

Nutrition

Maternal nutrition	Percent of mothers with low BMI	4.7
Low birth weight	Percent of births at low birth weight (of those reporting numeric weight)	6.3
Breastfeeding	Percent of children under 4 months who are exclusively breastfed	30.1
Iodine	Percent of households with iodized salt	27.2

Child Health

Measles	Percent of children age 12-23 months with measles vaccination	85.4
Full vaccination	Percent of children age 12-23 months fully vaccinated	82.2
Diarrhea control	Percent of children with diarrhea in preceding 2 weeks who received oral rehydration therapy (sugar-salt-water solution)	43.9
Acute respiratory infection	Percent of children with acute respiratory infection in preceding 2 weeks who were seen by medical personnel	48.0

[1] Data from the Ministry of Health
[2] Piped, well, and bottled water
[3] First births are excluded.

Kyrgyz Republic Demographic and Health Survey 1997

Research Institute of Obstetrics and Pediatrics
Ministry of Health of the Kyrgyz Republic
Bishkek City, Kyrgyz Republic

Macro International Inc.
Calverton, Maryland USA

August 1998

CONTENTS

TABLES

FIGURES

LIST OF CONTRIBUTORS

Naken K. Kasiev, M.D.
Minister of Health, Kyrgyz Republic
Ministry of Health
148 Moskovskaya Street
Bishkek City, Kyrgyz Republic 720040

Jeremiah M. Sullivan, Ph.D.
Deputy Director, Demographic and Health Surveys
Macro International Inc.
11785 Beltsville Drive
Calverton, MD 20705, USA

Duishe K. Kudayarov, M.D., Ph.D.
Director, Research Institute of Obstetrics and Pediatrics
Ministry of Health, Kyrgyz Republic
1, T. Moldo Street
Bishkek City, Kyrgyz Republic 720040

Gulnara U. Asimbekova, M.D., Ph.D.
Deputy Director, Research Institute of Obstetrics and Pediatrics
Ministry of Health, Kyrgyz Republic
1, T. Moldo Street
Bishkek City, Kyrgyz Republic 720040

Talaibek S. Builashev, M.D.
Deputy Director, Research Institute of Obstetrics and Pediatrics
Ministry of Health, Kyrgyz Republic
1, T. Moldo Street
Bishkek City, Kyrgyz Republic 720040

Almaz T. Sharmanov, M.D., Ph.D.
Health Specialist, Demographic and Health Surveys
Macro International Inc.
11785 Beltsville Drive
Calverton, MD 20705, USA

Kia I. Weinstein, Ph.D.
Consultant, Demographic and Health Surveys
Macro International Inc.
11785 Beltsville Drive
Calverton, MD 20705, USA

Jumabubu A. Doskeeva, M.D.
Chief, Department of Maternal and Child Health
Ministry of Health, Kyrgyz Republic
148 Moskovskaya Street
Bishkek City, Kyrgyz Republic 720040

Guldana D. Duishenbieva, M.D.
Senior Gynecologist
Ministry of Health, Kyrgyz Republic
148 Moskovskaya Street
Bishkek City, Kyrgyz Republic 720040

Apisa K. Kushbakieva M.D.
Senior Pediatrician
Ministry of Health, Kyrgyz Republic
148 Moskovskaya Street
Bishkek City, Kyrgyz Republic 720040

Thanh Lê
Sampling Statistician, Demographic and Health Surveys
Macro International Inc.
11785 Beltsville Drive
Calverton, MD 20705, USA

Mamadou Thiam
Sampling Statistician, Demographic and Health Surveys
Macro International Inc.
11785 Beltsville Drive
Calverton, MD 20705, USA

Abdumanap A. Muratov, M.D.
Kyrgyz Medical State Academy
1, T. Moldo Street
Bishkek City, Kyrgyz Republic 720040

Kalia K. Toguzbaeva, M.D.
Research Institute of Obstetrics and Pediatrics
Ministry of Health, Kyrgyz Republic
1, T. Moldo Street
Bishkek City, Kyrgyz Republic 720040

Janar B. Botbaeva, M.D.
Research Institute of Obstetrics and Pediatrics
Ministry of Health, Kyrgyz Republic
1, T. Moldo Street
Bishkek City, Kyrgyz Republic 720040

Maken S. Mysyraliev, M.D., Ph.D.
Kyrgyz Medical State Academy
92, I. Ahynbaeva Street
Bishkek City, Kyrgyz Republic 720020

PREFACE

The 1997 Kyrgyz Republic Demographic and Health Survey (KRDHS) was the first national-level population and health survey in the Kyrgyz Republic. The purpose of the survey was to provide the Ministry of Health of the Kyrgyz Republic with information on fertility, reproductive practices of women, maternal care, child health and mortality, child nutrition practices, breastfeeding, nutritional status and anemia. This information is important for understanding the factors that influence the reproductive health of women and the health and survival of infants and young children. It can be used in planning effective policies and programs regarding the health and nutrition of women and their children.

The successful completion of the KRDHS and publication of this volume is due to the contribution of many people. I would like to express my appreciation to the specialists from the Ministry of Health and staff members of the Research Institute of Obstetrics and Pediatrics. The survey fieldwork was completed smoothly and successfully with the help of government officials and public health workers at the levels of *oblast, raion*, and village in the Kyrgyz Republic. I would like to thank the KRDHS technical staff: Drs. Talaibek Builashev, Beisenbai Tulebekov, Sultanaly Borbiev, Zhanar Botbaeva, Kaliya Toguzbaeva, Abdimanap Muratov, as well as all field coordinators, interviewing teams, and data entry groups for their devotion and sincere efforts in accomplishing the survey activities. I would like to express my special appreciation to Dr. Duishe Kudayarov, KRDHS Executive Director, for efficient management and coordination of this study.

The KRDHS would not have been feasible without technical assistance, which was provided by the Demographic and Health Surveys (DHS) program of Macro International Inc., and the financial support of the U.S. Agency for International Development. First, I would like to thank Dr. Jeremiah M. Sullivan, DHS Deputy Director, for assisting with overall project design, analyses of the survey results, and report production, and Mr. Fred Arnold, Deputy Director of MEASURE Project, for his help during the initial stages of the survey. I would also like to thank: Dr. Almaz Sharmanov, for assisting with questionnaire development, field staff training, analysis of the survey results, and writing some of the chapters in this report; Mr. Trevor Croft for writing the computer programs, setting up the data processing operation, and producing the tabulations; and Ms. Thanh Lê for the sampling design. Special thanks are also due to Dr. Kia Weinstein for writing chapters of this report, Mr. Mamadou Thiam for estimation of sampling errors, Dr. Sidney Moore for editing the manuscript, and Ms. Celia Siebenmann for report production.

I would like to thank Dr. Tilek Meimanaliev, Director of the Health Reform Program, "Manas", as well as many others whose names are listed in Appendix E. I hope that the findings of the KRDHS will become a useful source of information for the ongoing health care reform in the Kyrgyz Republic.

<div align="right">

Dr. Naken Kasiev
KRDHS National Director
Minister of Health
The Kyrgyz Republic

</div>

SUMMARY OF FINDINGS

Naken K. Kasiev

The 1997 the Kyrgyz Republic Demographic and Health Survey (KRDHS) is a nationally representative survey of 3,848 women age 15-49. Fieldwork was conducted from August to November 1997. The KRDHS was sponsored by the Ministry of Health (MOH), and was funded by the United States Agency for International Development. The Research Institute of Obstetrics and Pediatrics implemented the survey with technical assistance from the Demographic and Health Surveys (DHS) program.

PURPOSE

The purpose of the KRDHS was to provide data to the MOH on factors which determine the health status of women and children such as fertility, contraception, induced abortion, maternal care, infant mortality, nutritional status, and anemia.

Some statistics presented in this report are currently available to the MOH from other sources. For example, the MOH collects and regularly publishes information on fertility, contraception, induced abortion and infant mortality. However, the survey presents information on these indices in a manner which is not currently available, i.e., by population subgroups such as those defined by age, marital duration, education, and ethnicity. Additionally, the survey provides statistics on some issues not previously available in the Kyrgyz Republic: for example, breastfeeding practices and anemia status of women and children. When considered together, existing MOH data and the KRDHS data provide a more complete picture of the health conditions in the Kyrgyz Republic than was previously available.

FERTILITY

Fertility Rates. Survey results indicate a total fertility rate (TFR) for all of the Kyrgyz Republic of 3.4 children per woman. Fertility levels differ for different population groups. The TFR for women living in urban areas (2.3 children per woman) is substantially lower than for women living in rural areas (3.9). The TFR for Kyrgyz women (3.6 children per woman) is higher than for women of Russian ethnicity (1.5) but lower than Uzbek women (4.2). Among the regions of the Kyrgyz Republic, the TFR is lowest in Bishkek City (1.7 children per woman), and the highest in the East Region (4.3), and intermediate in the North and South Regions (3.1 and 3.9, respectively).

Time Trends. The KRDHS data show that fertility has declined in the Kyrgyz Republic in recent years. The decline in fertility from 5-9 to 0-4 years prior to the survey increases with age, from an 8 percent decline among 20-24 year olds to a 38 percent decline among 35-39 year olds. The declining trend in fertility can be seen by comparing the completed family size of women near the end of their childbearing years with the current TFR. Completed family size among women 40-49 is 4.6 children which is more than one child greater than the current TFR (3.4).

Birth Intervals. Overall, 30 percent of births in the Kyrgyz Republic take place within 24 months of the previous birth. The median birth interval is 31.9 months.

Age at Onset of Childbearing. The median age at which women in the Kyrgyz Republic begin childbearing has been holding steady over the past two decades at approximately 21.6 years. Most women have their first birth while in their early twenties, although about 20 percent of women give birth before age 20.

Nearly half of married women in the Kyrgyz Republic (45 percent) do not want to have more children. Additional one-quarter of women (26 percent) want to delay their next birth by at least two years. These are the women who are potentially in need of some method of family planning.

FAMILY PLANNING

Ever Use. Among currently married women, 83 percent report having used a method of contraception at some time. The women most likely to have ever used a method of contraception are those age 30-44 (among both currently married and all women).

Current Use. Overall, among currently married women, 60 percent report that they are currently using a contraceptive method. About half (49 percent) are using a modern method of contraception and another 11 percent are using a traditional method. The IUD is by far the most commonly used method; 38 percent of currently married women are using the IUD. Other modern methods of contraception account for only a small amount of use among currently married women: pills (2 percent), condoms (6 percent), and injectables and female sterilization (1 and 2 percent, respectively). Thus, the practice of family planning in the Kyrgyz Republic places high reliance on a single method, the IUD.

Source of Methods. The vast majority of women obtain their contraceptives through the public sector (97 percent): 35 percent from a government hospital, and 36 percent from a women counseling center. The source of supply of the method depends on the method being used. For example, most women using IUDs obtain them at women counseling centers (42 percent) or hospitals (39 percent). Government pharmacies supply 46 percent of pill users and 75 percent of condom users. Pill users also obtain supplies from women counseling centers or (33 percent).

Fertility Preferences. A majority of women in the Kyrgyz Republic (45 percent) indicated that they desire no more children. By age 25-29, 20 percent want no more children, and by age 30-34, nearly half (46 percent) want no more children. Thus, many women come to the preference to stop childbearing at relatively young ages—when they have 20 or more potential years of childbearing ahead of them. For some of these women, the most appropriate method of contraception may be a long-acting method such as female sterilization. However, there is a deficiency of use of this method in the Kyrgyz Republic. In the interests of providing a broad range of safe and effective methods, information about and access to sterilization should be increased so that individual women can make informed decisions about using this method.

INDUCED ABORTION

Abortion Rates. From the KRDHS data, the total abortion rate (TAR)—the number of abortions a woman will have in her lifetime based on the currently prevailing abortion rates—was calculated. For the Kyrgyz Republic, the TAR for the period from mid-1994 to mid-1997 is 1.6 abortions per woman. The TAR for the Kyrgyz Republic is lower than recent estimates of the TAR for other areas of the former Soviet Union such as Kazakhstan (1.8), and Yekaterinburg and Perm in Russia (2.3 and 2.8, respectively), but higher than for Uzbekistan (0.7).

The TAR is higher in urban areas (2.1 abortions per woman) than in rural areas (1.3). The TAR in Bishkek City is 2.0 which is two times higher than in other regions of the Kyrgyz Republic. Additionally the TAR is substantially lower among ethnic Kyrgyz women (1.3) than among women of Uzbek and Russian ethnicities (1.9 and 2.2 percent, respectively).

INFANT MORTALITY

In the KRDHS, infant mortality data were collected based on the international definition of a live birth which, irrespective of the duration of pregnancy, is a birth that breathes or shows any sign of life (United Nations, 1992).

Mortality Rates. For the five-year period before the survey (i.e., approximately mid-1992 to mid-1997), infant mortality in the Kyrgyz Republic is estimated at 61 infant deaths per 1,000 births. The estimates of neonatal and postneonatal mortality are 32 and 30 per 1,000.

The MOH publishes infant mortality rates annually but the definition of a live birth used by the MOH differs from that used in the survey. As is the case in most of the republics of the former Soviet Union, a pregnancy that terminates at less than 28 weeks of gestation is considered premature and is classified as a late miscarriage even if signs of life are present at the time of delivery. Thus, some events classified as late miscarriages in the MOH system would be classified as live births and infant deaths according to the definitions used in the KRDHS.

Infant mortality rates based on the MOH data for the years 1983 through 1996 show a persistent declining trend throughout the period, starting at about 40 per 1,000 in the early 1980s and declining to 26 per 1,000 in 1996. This time trend is similar to that displayed by the rates estimated from the KRDHS. Thus, the estimates from both the KRDHS and the Ministry document a substantial decline in infant mortality; 25 percent over the period from 1982-87 to 1992-97 according to the KRDHS and 28 percent over the period from 1983-87 to 1993-96 according to the MOH estimates. This is strong evidence of improvements in infant survivorship in recent years in the Kyrgyz Republic.

It should be noted that the rates from the survey are much higher than the MOH rates. For example, the KRDHS estimate of 61 per 1,000 for the period 1992-97 is twice the MOH estimate of 29 per 1,000 for 1993-96. Certainly, one factor leading to this difference are the differences in the definitions of a live birth and infant death in the KRDHS survey and in the MOH protocols. A thorough assessment of the difference between the two estimates would need to take into consideration the sampling variability of the survey's estimate. However, given the magnitude of the difference, it is likely that it arises from a combination of definitional and methodological differences between the survey and MOH registration system.

MATERNAL AND CHILD HEALTH

The Kyrgyz Republic has a well-developed health system with an extensive infrastructure of facilities that provide maternal care services. This system includes special delivery hospitals, the obstetrics and gynecology departments of general hospitals, women counseling centers, and doctor's assistant/midwife posts (FAPs). There is an extensive network of FAPs throughout the rural areas.

Delivery. Virtually all births in the Kyrgyz Republic (96 percent) are delivered at health facilities: 95 percent in delivery hospitals and another 1 percent in either general hospitals or FAPs. Only 4 percent of births are delivered at home. Almost all births (98 percent) are delivered under the supervision of medically trained persons: 61 percent by a doctor and 37 percent by a nurse or midwife.

Antenatal Care. As expected, the survey data indicate that a high proportion of respondents (97 percent) receive antenatal care from professional health providers: the majority from a doctor (65 percent) and a significant proportion from a nurse or midwife (32 percent). The general pattern in the Kyrgyz Republic is that women seek antenatal care early and continue to receive care throughout their pregnancies. The median number of antenatal care visits reported by respondents is 8.

Immunization. Information on vaccination coverage was collected in the KRDHS for all children under three years of age. In the Kyrgyz Republic, child health cards are maintained in the local health care facilities or day care centers rather than in the homes of respondents. The vaccination data were obtained from the health cards in the health facilities or day care centers.

In the Kyrgyz Republic, the percentage of children 12-23 months of age who have received all World Health Organization (WHO) recommended vaccinations is high (82 percent). BCG vaccination is usually given in delivery hospitals and was nearly universal (99 percent). Almost all children (100 percent) have received the first doses of polio and DPT/DT. Coverage for the second doses of polio and DPT/DT is also nearly universal (98 percent). The third doses of polio and DPT/DT have been received by 95 percent of children. This represents a dropout rate of 5 percent for both the polio and DPT/DT vaccinations. A high proportion of children (85 percent) have received the measles vaccine.

NUTRITION

Breastfeeding. Breastfeeding is almost universal in the Kyrgyz Republic; 95 percent of children born in the three years preceding the survey are breastfed. Overall, 41 percent of children are breastfed within an hour of delivery and 65 percent within 24 hours of delivery. The median duration of breastfeeding is lengthy (16 months). However, durations of exclusive and full breastfeeding, recommended by WHO, are short (2.1 and 2.9 months, respectively).

Supplementary feeding. Supplementary feeding starts early in the Kyrgyz Republic. At age 0-3 months, 10 percent of breastfeeding children are given infant formula and 13 percent are given powdered or evaporated milk. By 4-7 months of age, 17 percent of breastfeeding children are given foods high in protein (meat, poultry, fish, and eggs) and 33 percent are given fruits or vegetables.

Nutritional Status. In the KRDHS, the height and weight of children under three years of age were measured. These data are used to determine the proportion of children who are stunted (short for their age, a condition which may reflect chronic undernutrition) and the proportion who are wasted (underweight according to their height, a condition which may reflect an acute episode of undernutrition resulting from a recent illness).

In a well-nourished population of children, it is expected that about 2.3 percent of children will be measured as moderately or severely stunted or wasted. For all of the Kyrgyz Republic, the survey found that 25 percent of children are severely or moderately stunted and 3 percent are severely or moderately wasted.

PREVALENCE OF ANEMIA

Testing of women and children for anemia was one of the major efforts of the 1997 KRDHS. Anemia has been considered a major public health problem in the Kyrgyz Republic for decades. Nevertheless, this was the first anemia study in the Kyrgyz Republic done on a national basis. The study involved hemoglobin (Hb) testing for anemia using the Hemocue system.

Women. Thirty-eight percent of the women in the Kyrgyz Republic suffer from some degree of anemia. The great majority of these women have either mild (28 percent) or moderate anemia (9 percent). One percent have severe anemia.

Children. Fifty percent of children under the age of three suffer from some degree of anemia. Twenty-four percent have moderate anemia. One percent of children are severely anemic. Thirty-two percent of the children living in the North Region and 24 percent of children living in the South and East Regions were diagnosed as having moderate or severe anemia. In Bishkek City the prevalence of moderate anemia among children was relatively low (13 percent).

Certain relationships are observed between the prevalence of anemia among mothers and their children. Among children of mothers with moderate anemia, 0.5 percent have severe anemia and 37 percent have moderate anemia. The prevalence of moderate anemia among these children is more than twice as high as among children of non-anemic mothers.

KYRGYZ REPUBLIC

KAZAKHSTAN

Chuiskaya
oblast

¤
Bishkek City

Talasskaya
oblast

Dzhelal-Abadskaya
oblast

Narynskaya oblast

Issyk-Kulskaya
oblast

UZBEKISTAN

Oshskaya
oblast
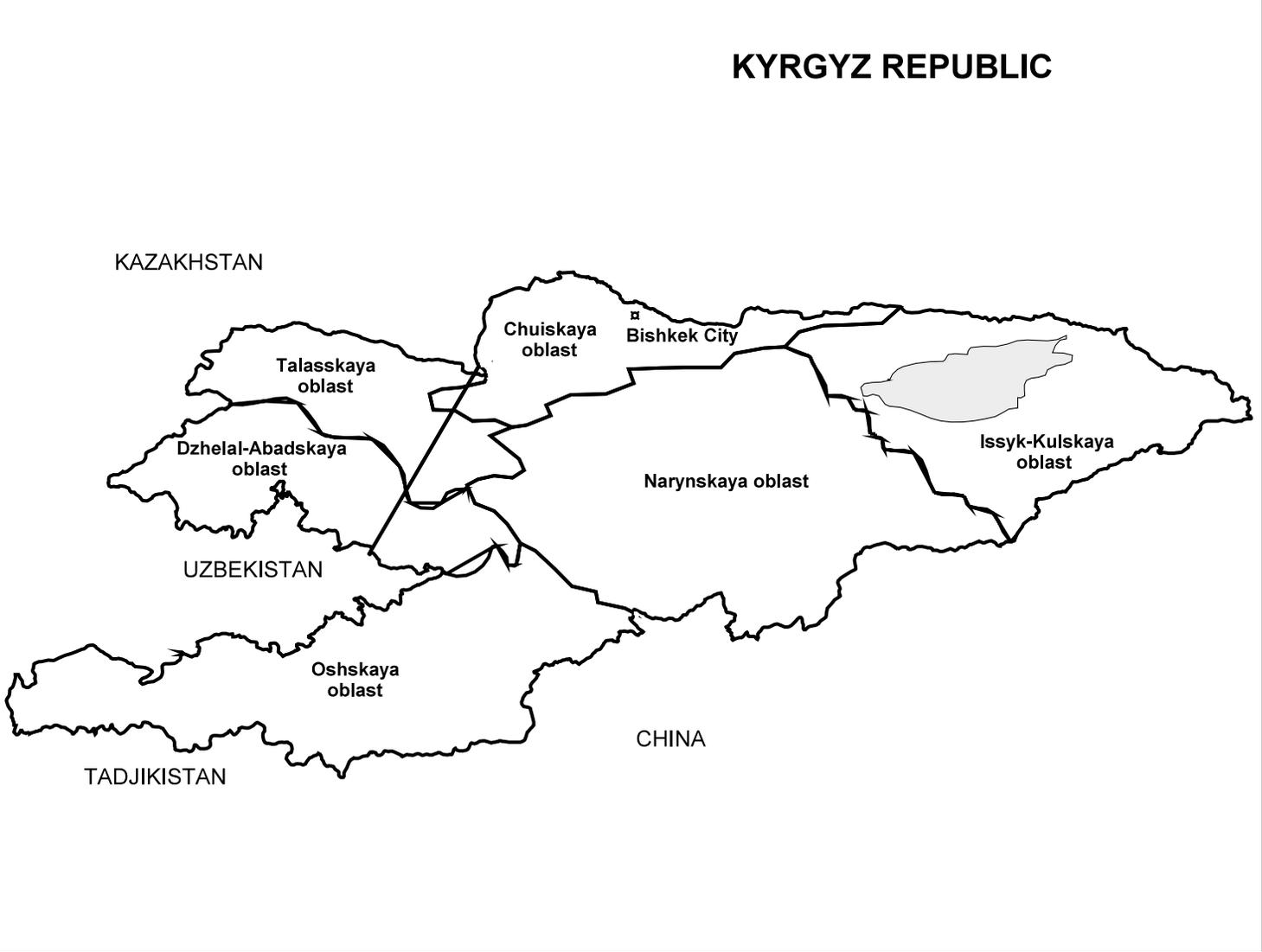
CHINA

TADJIKISTAN

CHAPTER 1

INTRODUCTION

Naken K. Kasiev

1.1   Geography, Population, and Culture

The Kyrgyz Republic is located in the center of Central Asia and shares borders with Kazakhstan, Uzbekistan, Tajikistan, and China. The Kyrgyz Republic is primarily mountainous with dry fertile valleys and deep gorges. The two main areas which are the base of Kyrgyz agriculture are the Ferghana Valley, in the Southwest, and the Chu Valley, in the North. Lake Issyk-Kul, located in Northeast Kyrgyzstan, is the second deepest mountain lake in the world. It is the main tourist and recreational spot in the country.

The population of the Kyrgyz Republic is more than 4.5 million. The country has an ethnically diverse population. According to the National Statistical Committee, in 1997 the ethnic breakdown was as follows: 61 percent Kyrgyz, 15 percent Russian, 14 percent Uzbek, and 10 percent a mix of Ukrainian, German, Kazakh, Tatar, Dungan, Tajik, Uigur, Korean, and others. Thirty-four percent of the population lives in urban areas, 66 percent in rural areas (National Statistical Committee, 1997).

The national language is Kyrgyz, which belongs to the Turkic language group. Russian is widely spoken and is an important language of communication. The primary religion of the people of the Kyrgyz Republic is Sunni Islam.

There are many ancient and modern cultural values in the Kyrgyz Republic. The great epic "Manas" characterizes the Kyrgyz people's independence and courage, and glorifies the legendary nobleman Manas. It is one of the longest epics in world literature (longer than the Iliad and the Odyssey combined), and is passed on orally from generation to generation. It is estimated to be nearly one million lines long, and makes early observations of the Kyrgyz people on geography, medicine, and astronomy.

1.2   History of the Kyrgyz Republic

The Kyrgyz belong anthropologically to the south Siberian group of the Mongolian race. There are different theories of ethnogenetic origin of the Kyrgyz. According to one of them the Kyrgyz are believed to have emerged from various groups that settled in Central Asia over 2,000 years ago. In the 9th and 12th centuries, some of these tribes moved to the central and western Tien Shan and Pamir regions and eventually formed what is today the Kyrgyz ethnic community. The area that Kyrgyzstan now occupies has been a crossroads for centuries. Lying on one branch of the fabled Silk Road, armies and traders have left their marks on the land and history of Kyrgyzstan.

Many kaganats (kingdoms) have ruled the area in different centuries. During the 10th to 12th centuries, the Kara Khanid dynasty ruled from their capital Balasagun, not far from present day Bishkek. The beginning of the 13th century brought Mongol rule and eventually Timurlane's hordes.

In the middle of the 19th century, Central Asia and its people were incorporated into the Russian Empire. In 1924, seven years after the 1917 Bolshevik Revolution, the Soviet Union established the Kara-Kyrgyz autonomous region, later renamed The Kyrgyz Autonomous Republic. In 1936, its status was elevated to a Kyrgyz Soviet Socialist Republic of the USSR.

On August 31, 1991, after the collapse of the former Soviet Union, the Kyrgyz Republic officially declared itself an independent state. Through the leadership of President Askar Akaev, the Kyrgyz Republic has started on the road to economic and political reforms, reclaiming the democratic and independent roots of the Kyrgyz people.

1.3   Economy

The dominating sectors of the Kyrgyz economy are industry and agriculture. According to the World Bank, the GDP in 1995 was US$ 3.2 billion (US$700 per capita) (World Bank, 1997). Within the industrial sector, the most developed areas are electrical production and mining. In 1993, industry accounted for 37.8 percent of the GDP, agriculture for 28.6 percent, service for 22.6 percent, construction for 6.9 percent, and transportation/telecommunications for 4.8 percent.

The industrial sector of the Kyrgyz Republic is represented primarily by light industry (30 percent), food industry (22 percent), and manufacturing-building industry (20 percent). The mining and metallurgy industries provide 10 percent of industrial production and employ 11 percent of the industrial labor force. At present, the main areas of mining and production are gold, antimony, antimony oxide, metallic mercury, uranium oxide molybdenum, coal, oil, and gas.

Agriculture is the second most important sector of the Kyrgyz economy after industry. It includes wool, livestock, and fruit and vegetable production. Labor resources and output of the stockbreeding sector amount to two-thirds of the agricultural GDP.

Following three years of sharply declining production—output is currently 45 percent below the 1991 level—the Kyrgyz economy showed the first signs of recovery in 1995, led by modest growth in crop production and a growing private service sector. Preliminary data suggest that GDP grew by 1 percent in 1995 and at an annual rate of 2 percent in the first quarter of 1996. Indications are good for growth of 2 to 3 percent for 1996 as a whole. This positive result reflects the wide range of stabilization and adjustment measures the government has pursued, including introducing a new currency (the *som*), bringing inflation down to low monthly rates, nearly completing liberalization of the trade regime, removing controls on current and capital account transactions, privatizing most industrial and trade enterprises, dismantling state and collective farms, and distributing land-use rights. The Kyrgyz Republic has entered into a three-year Enhanced Structural Adjustment Facility arrangement with the IMF (World Bank Review, 1997).

The Kyrgyz Republic is shifting to a market economy based on equal development of different forms of ownership, encouragement of entrepreneurship, and privatization. The new economic policy is based on recent legislation on land, entrepreneurship, and banking adopted by the parliament of the Republic.

1.4   Health Care System

The health care system in the Kyrgyz Republic, which developed as part of the Soviet-planned system, was designed to provide adequate access to health services for all citizens and to emphasize preventive care.

Primary health care in the Kyrgyz Republic is provided in such institutions as polyclinics, outpatient clinics (ambulatories), doctor's assistant/midwife posts (FAPs), primary health facilities at large enterprises, women's consulting centers (which are a primary source of family planning services in urban areas), and delivery hospitals. The main focus of the health services in these institutions is disease prevention (for example, immunization against infectious diseases), and providing antenatal care services, delivery assistance, and family planning services.

On the secondary level, health services are provided by specialized dispensaries and city and rayon hospitals where screening programs are carried out to identify individuals with early manifestations of disease, and treatment programs are implemented to halt the progress of the disease.

Tertiary health services in the Kyrgyz Republic are provided within oblast and republican hospitals, specialized hospitals and dispensaries, and research institutes. The clinical treatment offered at these facilities is aimed at minimizing the effects of disease and disability.

Maternal and child health services in the Kyrgyz Republic are largely provided through wide network of primary health care institutions. Almost all deliveries occur at delivery hospitals and, in rare cases, at regular hospitals. Antenatal care is provided mainly by doctors at the women's consulting centers (part of urban polyclinics), rayon and rural ambulatories, FAPs. Antenatal care starts early in pregnancy (usually during the first trimester of pregnancy) and continues on a monthly basis throughout the pregnancy.

Child health services in the Kyrgyz Republic include neonatal care, which is usually provided in the first week after delivery when a woman and her newborn are still in the delivery hospital, and other pediatric services at older ages. After discharge from the delivery hospital, a child is visited by a patronage nurse who provides the mother with general counseling on child care and carries out a physical examination of the child. A mother is required to bring her child in for a regular checkup and vaccination at the polyclinic or outpatient clinic several times during the first two years of life. A doctor in the polyclinic can refer the child to a pediatrician in case the child develops disease or other conditions that require special care or hospitalization.

The child vaccination schedule in the Kyrgyz Republic requires that BCG and oral polio vaccines be given in the delivery hospital during the first 3-4 days of life. Revaccination with oral polio vaccine is usually done at age 2, 3.5, 5, 16, and 18 months, and 6-7 years. The vaccination schedule for diphtheria, pertussis, and tetanus toxoid (DPT) is similar to the schedule for the polio, except that the first DPT vaccination is given at age 2 months. Measles vaccinations are given at 12 months and 6-7 years of age (Steinglass, 1995).

The vaccination schedule is controlled throughout childhood by several mechanisms. During the first two years of life, the patronage nurse is responsible for maintaining vaccination records and ensuring that the child receives vaccinations at the appropriate time. After that period, the vaccination schedule may still be under the control of the pediatrician of polyclinics or the records can be transferred to a day care center if the child attends one. In the latter case, vaccination is coordinated by the day care nurse. Finally, when the child starts to attend primary school at the age of seven, the school nurse becomes responsible for the child's vaccinations.

Unfortunately, maintaining such a system requires substantial and continuous budgetary support and enormous human resources and appropriate management. The socioeconomic changes in the Kyrgyz Republic during the last five years have influenced the health sector. The reduction in financial resources has become the main obstacle to ensuring medical care and services, and this in turn has led to a deterioration in the health of the population.

The epidemiological situation in the Republic continues to be tense with regard to many infectious diseases such as tuberculosis, brucellosis, sexually transmitted diseases, respiratory infections, and diarrhea, as well as noncommunicable diseases such as coronary heart disease, stroke, chronic obstructive pulmonary disease, and cancer.

These factors prompted the Ministry of Health to take immediate action, which resulted in a variety of activities. With the technical assistance from the World Health Organization, the Ministry of Health developed the Manas Health Care Reform Program, which will develop consistent health care reform policies and strategies to improve the health of the population through the year 2006.

The basic principles of the health care reform are (1) improvement of the health status of the population, (2) achievement of health equity by reducing and eliminating differences in health indicators between regions and between urban and rural areas, (3) provision of guaranteed access to existing health services, and (4) assurance of protection of patients rights. These goals can be accomplished through restructuring of the health care system, prioritization of services, and changes in the health finance system (Ministry of Health, 1996).

Under the health reform program the following priorities were set:
-        improvement of health of mother and child;
-        control of tuberculosis and sexually transmitted diseases;
-        prevention of cardiovascular diseases;
-        environmental protection;
-        introduction and implementation of family doctor practices;
-        transformation of rural hospitals into primary health centers;
-        restructuring of ambulatory care services;
-        introduction of compulsory health insurance system;
-        transition to per capita financing.

1.5   Family Planning Policies and Programs

The Ministry of Health is responsible for providing family planning services throughout the country. The main goal of the family planning policy is to ensure low-risk pregnancies and safe motherhood, to reduce complications due to inadequately spaced pregnancies, and to reduce the incidence and prevalence of pregnancy complications and extragenital diseases among women of reproductive age.

The Ministry of Health manages a broad spectrum of activities including providing intensive family planning education for the population and supplying contraceptives throughout the country. The private sector is also involved in marketing contraceptives. While promoting awareness of family planning and access of women to a variety of contraceptives, the Ministry also is concerned with the quality, safety and effectiveness of contraceptive methods. In order to control family planning services, the Ministry of Health considers them as part of maternal and child protection and requires that adequate counseling on the selection and use of contraceptive methods be done by health professionals with skills in obstetrics and gynecology.

In the Kyrgyz Republic, one of the primary methods of birth control is induced abortion which is usually done at the outpatient departments of general hospitals or at delivery hospitals. Induced abortion is legal in the Kyrgyz Republic if done during the first 12 weeks of pregnancy. In some cases induced abortion can be performed after 12 weeks if certain medical or social indications exist. These cases require strong supervision of qualified medical personnel in a hospital setting. Abortion can be done free of charge. Lately fee-for-services facilities have become available to perform mini-abortions by the vacuum aspiration technique. Despite some indications that the number of induced abortions has declined in recent years, the abortion issue remains a public health concern in the Kyrgyz Republic because of the prevalence of complications and the overall adverse effects on women's health.

Due to the policy of promoting the use of safe methods of family planning, wide use of contraception has been observed in the Kyrgyz Republic during the last several years. Among the most popular methods of contraception is the intrauterine device. Traditionally, many women continue to rely on the intrauterine device as a convenient and safe method. For many years oral contraceptives were less available in the Kyrgyz Republic because of the order *"On the Side Effects and Complications of Oral Contraceptives",* published by the Ministry of Health of the former Soviet Union in 1974. This document, in effect, banned the distribution and use of oral contraceptives (United Nations, 1995). Women in the Kyrgyz Republic now have broad access to a variety of methods of contraception including oral contraceptives and injectables. They are distributed centrally through pharmacies and women's consulting centers. and privately via private pharmacies.

1.6   Demographic and Health Data Collection System in the Kyrgyz Republic

The demographic and health data collection system in the Kyrgyz Republic is based on the registration of events and periodic censuses. The data on births, deaths, marriages, and divorces are registered at the local administrative level of an internal passport control system. These data are then forwarded to the National Statistical Committee through the *raion-* and *oblast*-level statistical offices. The National Statistical Office is responsible for conducting censuses and maintaining this registration system. The last census in the Kyrgyz Republic was conducted in 1989, and the census results were published in 1990. In addition, the National Statistical Committee is responsible for tabulating and publishing an annual report of demographic data generated by the registration system. The next census in the Kyrgyz Republic is planned for 1999.

Collection of health data is a primary responsibility of the Health Information Center of the Ministry of Health. Health information is generated by staff at the facilities delivering services and then sent to the Health Information Center through the *raion-* and *oblast*-level health statistical information departments. The Health Information Center of the Ministry of Health compiles and analyzes these data and issues annual reports entitled *Health of the Population of the Republic of the Kyrgyz Republic and Health Resources.*

The health data collected and published by the Health Information Center of the Ministry of Health consist of the following major categories: 1) morbidity specified by type of disease (infectious and non-infectious); 2) mortality specified by causes of death; 3) infant deaths, including data on antenatal, perinatal, and early neonatal deaths; 4) maternal mortality specified by causes of maternal death; 5) data on maternal and child health, including antenatal care and delivery assistance, contraceptive clients, induced abortion rates, pediatric services, etc; 6) number of health facilities, medical personnel, hospital beds, and length of average stay in the hospital; and 7) health data specified by type of medical services including medical care for patients with cancer, tuberculosis, mental disorders, drug abuse, and sexually transmitted diseases. These data are usually tabulated at the national and *oblast* levels, and for some categories, by the age groups 0-14 and 15 or more years.

1.7   Objectives and Organization of the Survey

The purpose of the 1997 Kyrgyz Republic Demographic and Health Survey (KRDHS) was to provide an information base to the Ministry of Health for the planning of policies and programs regarding the health of women and children. The KRDHS collected data on women's reproductive histories, knowledge and use of contraception, breastfeeding practices, and nutrition, vaccination coverage, and episodes of illness among children under the age of three. The survey also included, for all women of reproductive age and for children under the age of three, measurement of the hemoglobin level in the blood (to assess the prevalence of anemia) and measurements of height and weight (to assess nutritional status).

A secondary objective of the survey was to enhance the capabilities of institutions in the Kyrgyz Republic to collect, process, and analyze population and health data.

The 1997 KRDHS was the first national-level population and health survey in the Kyrgyz Republic. It was implemented by the Research Institute of Obstetrics and Pediatrics of the Ministry of Health of the Kyrgyz Republic. The 1997 KRDHS was funded by the United States Agency for International development (USAID) and technical assistance was provided by Macro International Inc. (Calverton, Maryland USA) through its contract with USAID.

1.7.1 Sample Design and Implementation

The KRDHS employed a representative probability sample of women age 15 to 49. Selected survey estimates were to be produced for four survey regions. The capital city of Bishkek and Narynskaya *oblast*, which is located in the mountainous eastern part of the Republic, constituted two survey regions by themselves (survey regions 1 and 3, respectively). The remaining two survey regions consisted of groups of contiguous *oblasts* located in the north (Survey Region 2) and south (Survey Region 4) of the Kyrgyz Republic (Figure 1.1). The four survey regions were defined as follows:

Survey Region 1:   Bishkek City
Survey Region 2 (North):   Issyk-Kulskaya, Chuiskaya and Talasskaya *oblasts.*
Survey Region 3 (East):   Narynskaya *oblast.*
Survey Region 4 (South):   Oshskaya and Dzhelal-Abadskaya *oblasts.*

In rural areas, the primary sampling units (PSUs) were the *raions,* which were selected with probabilities proportional to size, the size being the population size as published by Goskomstat. At the second stage, one village was selected in each selected *raion*, from the list of villages collected by the Institute of Obstetrics and Pediatrics. This resulted in 76 rural clusters being selected. Very large villages (with 400 households or more) that were selected were divided in the field into smaller segments, and one segment was selected prior to the household listing operation. A complete listing of the households in the selected clusters was carried out. The lists of households served as the frame for third-stage sampling, i.e., the selection of the households to be visited by the KRDHS interviewing teams. In each selected household, all women age 15-49 were eligible to be interviewed.

In the urban areas, the sampling frame is the list of therapeutical *uchastoks* that have been collected by the Institute of Obstetrics and Pediatrics. However the list of *uchastoks* only exists for main cities and not for small towns. For small towns, each town was divided into segments of equal size (around 2,000 population), and these segments have been treated as if they were *uchastoks*. The selected *uchastoks* were segmented prior to the household listing operation, which provided the household lists for the third-stage selection of households. In total, 86 *uchastoks* were selected.

On average, 20 households were selected in each urban cluster, and 30 households were selected in each rural cluster. It was expected that the sample would yield interviews with approximately 4,000 women between the ages of 15 and 49. Because of the nonproportional distribution of the sample in the different survey regions, sampling weights were applied to the data in this report.

Details of the KRDHS sample design are given in Appendix A and the estimation of sampling errors for selected variables is in Appendix B.

1.7.2 Questionnaires

Two questionnaires were used for the KRDHS: the Household Questionnaire and the Individual Questionnaire. The questionnaires were based on the model survey instruments developed in the DHS program. The questionnaires were adapted to the data needs of the Kyrgyz Republic during consultations with specialists in the areas of reproductive health and child health in the Kyrgyz Republic. Both questionnaires were developed in English and then translated into Russian and Kyrgyz. A pretest was conducted in June 1997. Based on the pretest experience, the questionnaires were further modified.

The Household Questionnaire was used to enumerate all usual members and visitors in a sample household and to collect information relating to the socioeconomic position of the household. In the first part of the Household Questionnaire, information was collected on age, sex, educational attainment, and relationship to the head of household of each person listed as a household member or visitor. A primary objective of the first part of the Household Questionnaire was to identify women who were eligible for the individual interview. In the second part of the Household Questionnaire, questions were included on the dwelling unit, such as the number of rooms, the flooring material, the source of drinking water, and the type of toilet facilities, and on the availability of a variety of consumer goods.

The Individual Questionnaire was used to collect information from women age 15-49. These women were asked questions on the following major topics:

- Background characteristics
- Pregnancy history
- Outcome of pregnancies and antenatal care
- Child health and nutrition practices
- Child immunization and episodes of diarrhea and respiratory illness
- Knowledge and use of contraception
- Marriage and fertility preferences
- Husband's background and woman's work
- Maternal and child anthropometry
- Hemoglobin measurement of women and children

One of the major efforts of the KRDHS was the testing of women and children for anemia. Testing was done by measuring hemoglobin levels in the blood, using the Hemocue technique. Before collecting the blood sample, each woman was asked to sign a consent form, giving permission for the collection of a blood droplet from her and her children. Results of the anemia testing were kept confidential (as are all KRDHS data); however, strictly with the consent of respondents, local health care facilities were informed of women who had severely low levels of hemoglobin (less than 7 g/dl).

1.7.3 Training and Fieldwork

The KRDHS questionnaires were pretested in June 1997. Eight interviewers were trained over a two-week period at the Institute of Obstetrics and Pediatrics. The pretest included one week of interviewing in an urban area (Bishkek City) and one week in a rural area. A total of 120 women were interviewed. Pretest interviewers were retained to serve as supervisors and field editors for the main survey.

A total of 40 people (mainly the staff members of the Institute of Obstetrics and Pediatrics: physicians, researchers and nurses), were recruited as field supervisors, editors, interviewers and medical technicians for the main survey. They were trained for three weeks in July-August 1997. Training consisted of in-class lectures and practice, as well as interviewing in the field. Interviewers were selected based on their performance during the training period.

The KRDHS data collection was carried out by three teams. Each team consisted of eight members: the team supervisor, one editor, one household interviewer, four individual women interviewers, and one medical technician (responsible for height and weight measurement and anemia testing). All interviewers were female.

All three interviewing teams began work in Region 1 (Bishkek City) on August 8. After about two weeks of interviewing in Bishkek City, all teams were assigned to the remaining survey regions and fieldwork started in Regions 2 through 4. The data collection was completed on November 8, 1997

1.7.4 Data Processing

Questionnaires were returned to the Institute of Obstetrics and Pediatrics in Bishkek for data processing. The office editing staff checked that questionnaires for all selected households and eligible respondents were returned from the field. The few questions which had not been pre-coded (e.g., occupation, type of chronic disease) were coded at this time. Data were then entered and edited on microcomputers using the ISSA (Integrated System for Survey Analysis) package, with the data entry software translated into Russian. Office editing and data entry activities began on September 15, and were completed on December 17, 1997.

1.7.5 Response Rates

Table 1 presents information on the coverage of the KRDHS sample including household and individual response rates. A total of 3,821 households were selected in the sample, of which 3,695 were occupied at the time fieldwork was conducted. The main reason for the difference was that some dwelling units which were occupied at the time of the household listing operation were either vacant or the household was away for an extended period at the time of interviewing. Of the 3,695 occupied households, 3,672 were interviewed, yielding a household response rate of 99 percent.

Table 1.1 Results of the household and individual interviews

Number of households, number of interviews and response rates, Kyrgyz Republic 1997

| | Residence | | |
Result	Urban	Rural	Total
Household interviews			
Households sampled	1,757	2,064	3,821
Households found	1,686	2,009	3,695
Households interviewed	1,668	2,004	3,672
Household response rate	98.9	99.8	99.4
Individual interviews			
Number of eligible women	1,517	2,437	3,954
Number of eligible women interviewed	1,485	2,363	3,848
Eligible woman response rate	97.9	97.0	97.3

In the interviewed households, 3,954 women were eligible for the individual interview (i.e., all women 15-49 years of age who were either usual residents or visitors who had spent the previous night in the household). Interviews were successfully completed with 3,848 of these women, yielding a response rate of 97 percent. The principal reason for nonresponse was a failure to find an eligible woman at home after repeated visits to the household. The overall response rate for the survey, the product of the household and the individual response rates, was 97 percent.

CHAPTER 2

CHARACTERISTICS OF HOUSEHOLDS
AND RESPONDENTS

Talaibek S. Builashev and Abdumanap A. Muratov

Data pertaining to the background characteristics of household members and respondents to the Woman's Questionnaire are presented in this chapter. Since demographic and health parameters are influenced by sociobiological factors, this information is important in interpreting results. Moreover, data on characteristics of households and respondents can serve as an indicator of the representativeness of the sample and of the quality of the data obtained.

This chapter includes three sections: characteristics of the household population (household structure, age-sex characteristics and level of education of the household members); housing characteristics (presence of electricity, source of drinking water, sanitation, etc.) and background characteristics of respondents to the Woman's Questionnaire (residence, age, ethnicity, marital status, occupation, etc.).

2.1   Household Population

The KRDHS Household Questionnaire collected data on the sociodemographic characteristics of the members and visitors in each sampled household. A household was defined as a person or group of persons usually living and eating together and jointly running the household's economy (de jure population). Visitors were persons who were not household members but had spent the night before the interview in a sampled household. All female household members and visitors 15-49 years of age were eligible as respondents for the individual interview. The total de facto population in the selected households was 16,728 people.

2.1.1   Sex and Age Composition

Table 2.1 presents the distribution of the de facto household population by five-year age groups according to sex and residence. In excess of one-third of the population consists of children under 14 years of age (38 percent), with the proportion of children in rural areas being higher than in urban areas (41 and 32 percent, respectively). In urban areas, the number of women exceeds the number of men, while in rural areas this proportion is almost the same.

As seen in Figure 2.1, the age-sex structure of the Kyrgyz Republic population has the form of a pyramid with a wide base, gradually tapering to a sharp peak. The relatively small size of the male and female population in the age interval 50-54 is a reflection of the low birth rates during World War II (i.e., 50 to 54 years prior to the KRDHS).

The percent distribution of the KRDHS population by broad age groups is presented in Table 2.2. Thirty-eight percent of the population of the Kyrgyz Republic are people under 15 years of age, 56 percent are 15-64 years of age, and 6 percent are 65 and older.

It is interesting to compare 1997 KRDHS data with the 1997 data reported by the National Statical Committee. The correspondence of the percent distribution of the population between these two sources confirms the representativeness of the KRDHS samples.

Table 2.1 Household population by age, residence and sex

Percent distribution of the de facto household population by age, according to sex and residence, Kyrgyz Republic 1997

Age	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	9.8	8.8	9.3	13.4	13.2	13.3	12.4	11.8	12.1
5-9	13.1	10.4	11.7	13.7	12.7	13.2	13.5	12.0	12.7
10-14	12.0	10.2	11.0	14.8	14.3	14.6	14.0	13.0	13.5
15-19	8.7	8.6	8.7	9.9	9.4	9.7	9.6	9.2	9.4
20-24	7.6	7.7	7.6	8.7	8.0	8.3	8.3	7.9	8.1
25-29	6.6	6.8	6.7	7.6	6.3	7.0	7.3	6.5	6.9
30-34	7.8	9.6	8.7	5.9	7.1	6.5	6.4	7.9	7.2
35-39	8.4	7.3	7.8	6.8	7.0	6.9	7.2	7.1	7.2
40-44	6.1	5.8	5.9	4.7	4.9	4.8	5.1	5.1	5.1
45-49	5.3	4.5	4.8	3.3	3.4	3.3	3.8	3.8	3.8
50-54	3.3	3.3	3.3	1.8	1.8	1.8	2.2	2.3	2.2
55-59	3.0	4.1	3.6	2.4	2.8	2.6	2.6	3.2	2.9
60-64	3.3	4.9	4.2	2.3	2.8	2.5	2.6	3.5	3.0
65-69	2.4	3.1	2.8	2.5	2.6	2.5	2.5	2.7	2.6
70-74	1.3	2.4	1.9	1.3	1.6	1.5	1.3	1.9	1.6
75-79	0.6	1.3	1.0	0.6	1.0	0.8	0.6	1.1	0.9
80+	0.8	1.2	1.0	0.5	1.1	0.8	0.6	1.1	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	2,326	2,700	5,026	5,881	5,821	11,702	8,207	8,521	16,728

Figure 2.1
Population Pyramid of the Kyrgyz Republic
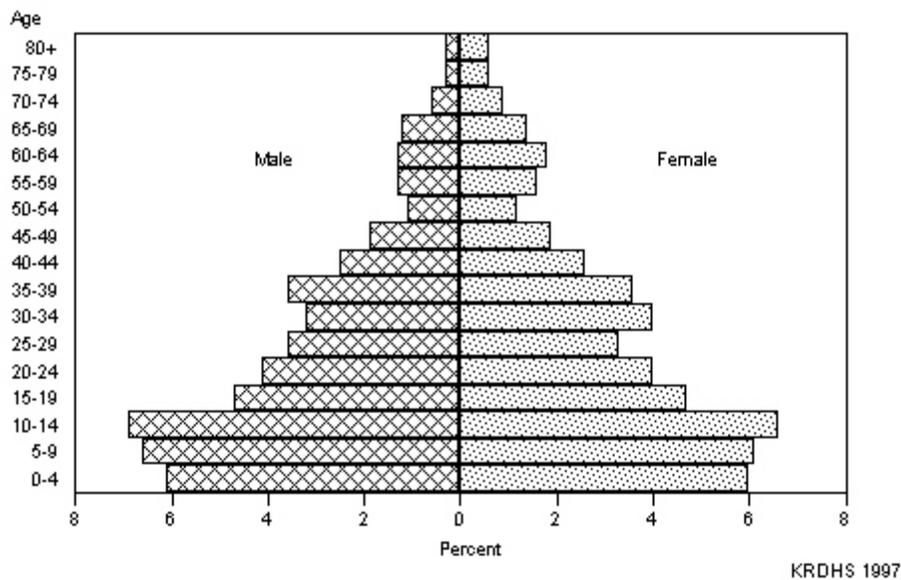
KRDHS 1997

Table 2.2 Population by age

Percent distribution of the de jure population by age group, selected sources, Kyrgyz Republic 1997

Age	KRDHS 1997	National Statistical Office 1997
<15	37.7	37.3
15-64	56.4	57.2
65+	5.9	5.5
Total	100.0	100.0
Median age	21.8	-
Dependency ratio	77.3	74.8

2.1.2   Household Composition

Table 2.3 presents information on the size and composition of households according to urban-rural residence. The head of household (as reported by the household respondent) and the relationship of each household member to the head was determined in each household. In general, heads of households are mainly males (74 percent). In urban areas the proportion of households headed by men (61 percent) is less than in rural areas (82 percent).

About 50 percent of households consist of between one and four members, with the average size of a household in the Kyrgyz Republic being 4.6 members. There are significant differences in the household size between urban and rural areas, with the average urban household consisting of 3.5 members compared to 5.4 in rural households. About 7 percent of households include foster children under 15 years old. In rural areas this number (9 percent) is more than twice as high as in urban areas (4 percent).

Table 2.4 presents information on children under age 15 by survival status of the parents according to selected sociobiological factors.

Eighty-three percent of children under age 15 live with both parents. Rural children are more likely than urban children to live with both parents. Eleven percent of children under age 15 are living with only their mother; of these, 3 percent have lost their fathers and 8 percent have fathers who are still alive. There are distinctions in this parameter depending on age of children, their sex and place of residence. It is notable that a significant number of children (5 percent) are not living with their parents though both parents are alive.

Regarding orphanhood, about 3 percent of children under age 15 have fathers who have died, and less than 1 percent have mothers who have died, and while only a small fraction have lost both parents.

2.1.3   Educational Level of Household Members

The Kyrgyz Republic's primary and secondary educational system has three levels: primary (classes 1-4, age 6/7 - 10/11 years); principal (classes 5-9, age 11-15 years); secondary (classes 10-11, age 16-17 years). The primary and principal education levels are compulsory. Those who leave after the principal level of education (9 classes) may continue in secondary-special (vocational) education.

Table 2.3 Household composition

Percent distribution of households by sex of head of household, household size, and percentage of households with foster children, according to residence, Kyrgyz Republic 1997

	Residence		
Characteristic	Urban	Rural	Total
Household headship			
Male	61.4	82.0	73.6
Female	38.6	18.0	26.4
Number of members			
1	16.1	2.5	8.0
2	19.0	6.3	11.5
3	17.8	9.9	13.1
4	19.4	15.5	17.1
5	13.5	20.0	17.3
6	7.1	17.8	13.5
7	3.6	12.7	9.0
8	1.9	6.2	4.5
9+	1.2	9.2	5.9
Mean size	3.5	5.4	4.6
Percent with foster children	3.6	8.6	6.6

Note: Table is based on de jure members; i.e., usual residents.

Table 2.4 Fosterhood and orphanhood

Percent distribution of de facto children under age fifteen by their living arrangement and survival status of parents, according to child's age, sex, residence, and region, Kyrgyz Republic 1997

Background characteristic	Living with both parents	Living with mother but not father		Living with father but not mother		Not living with either parent				Missing info. on father/ mother	Total	Number of children
		Father alive	Father dead	Mother alive	Mother dead	Both alive	Father only alive	Mother only alive	Both dead			
Age												
0-2	86.1	10.1	0.4	0.1	0.0	2.9	0.0	0.1	0.0	0.3	100.0	1,172
3-5	81.5	9.7	1.4	1.4	0.0	5.6	0.1	0.0	0.0	0.3	100.0	1,249
6-8	81.6	7.6	2.9	0.6	0.6	6.3	0.1	0.1	0.0	0.2	100.0	1,296
9-11	83.6	6.1	3.1	1.7	0.7	4.4	0.0	0.1	0.2	0.2	100.0	1,374
12-14	80.7	6.5	4.9	1.2	0.6	4.8	0.2	0.3	0.3	0.5	100.0	1,318
Sex												
Male	83.2	7.0	2.7	1.1	0.3	4.9	0.1	0.1	0.1	0.3	100.0	3,273
Female	82.0	8.8	2.4	0.9	0.5	4.7	0.1	0.1	0.2	0.3	100.0	3,136
Residence												
Urban	78.4	13.2	2.7	0.7	0.1	4.1	0.1	0.1	0.1	0.4	100.0	1,607
Rural	84.1	6.1	2.6	1.1	0.5	5.1	0.1	0.1	0.1	0.2	100.0	4,802
Region												
Bishkek City	78.8	13.0	1.9	0.6	0.1	3.5	0.0	0.5	0.5	0.9	100.0	461
North	79.0	7.5	3.3	2.5	0.4	6.7	0.1	0.1	0.2	0.4	100.0	1,964
East	84.6	5.5	3.4	0.1	1.0	4.8	0.2	0.0	0.0	0.3	100.0	398
South	84.9	7.7	2.2	0.4	0.4	4.0	0.1	0.1	0.0	0.1	100.0	3,586
Total	82.6	7.9	2.6	1.0	0.4	4.8	0.1	0.1	0.1	0.3	100.0	6,409

Note: By convention, *foster* children are those who are not living with either parent. This includes *orphans,* i.e., children both of whose parents are dead.

The secondary-special (vocational) educational system in the Kyrgyz Republic provides a combination of general education and technical skills to students age 15-20 during 2-4 years of schooling. The number of years in the secondary-special schools depends on the curriculum under study. Those who finish secondary and secondary-special school can continue their education at a higher level—at universities or academic training institutes.

The KRDHS confirms the high education level of the Kyrgyz Republic population. As can be seen in Table 2.5, 97 percent of women have had at least some education. A high percentage of the women have secondary-special and higher education, especially those in the 20-54 age group. Overall, the median years of schooling for women is 10 years. The education level of urban women is higher than for rural women. There are also education differences between women in Bishkek City and other regions.

Data in Table 2.6 show that men in the Kyrgyz Republic also have a high education level. Thirty percent of men have secondary-special and higher education, and in certain age groups, the proportion is almost 60 percent. The proportion of men with higher education is greater in urban than in rural areas (20 and 7 percent, respectively) and greater in Bishkek City (29 percent) than in the other regions (7 to 9 percent).

To predict a general education level of the population of the country, it is important to have information about school enrollment of the children and young people under age 24. As can be seen in Table 2.7 and Figure 2.2, 90 percent of children age 7-17 were enrolled in school, with only slight differences by residence and sex.

Table 2.5 Educational level of the female household population

Percent distribution of the de facto female household population age seven and over by highest level of education attended, and median number of years of schooling, according to selected background characteristics, Kyrgyz Republic 1997

| Background characteristic | Level of education | | | | | | | Median years of schooling |
	No education	Primary/ Secondary	Secondary- Special	Higher	Missing	Total	Number	
Age								
7-9	4.7	95.2	0.1	0.0	0.0	100.0	596	2.1
10-14	0.9	98.9	0.2	0.0	0.0	100.0	1,107	5.6
15-19	0.7	76.0	12.9	10.4	0.0	100.0	780	10.2
20-24	0.2	54.3	30.2	15.3	0.0	100.0	675	11.0
25-29	0.6	42.7	39.7	17.0	0.0	100.0	550	10.7
30-34	0.6	41.3	38.9	19.2	0.0	100.0	670	10.8
35-39	1.0	48.0	32.8	18.2	0.0	100.0	608	10.7
40-44	0.0	51.2	29.7	19.1	0.0	100.0	439	10.8
45-49	1.3	51.0	28.0	19.5	0.2	100.0	320	10.8
50-54	3.0	54.1	19.8	23.1	0.0	100.0	193	10.7
55-59	3.5	70.1	14.4	12.0	0.0	100.0	273	10.0
60-64	9.8	65.2	12.0	13.0	0.0	100.0	299	7.8
65+	21.6	63.1	9.6	5.7	0.0	100.0	577	5.4
Residence								
Urban	2.8	50.7	24.7	21.8	0.0	100.0	2,352	10.5
Rural	3.5	73.4	16.7	6.3	0.0	100.0	4,736	10.0
Region								
Bishkek City	1.9	41.1	25.2	31.8	0.1	100.0	962	11.0
North	2.7	64.7	22.5	10.1	0.0	100.0	2,229	10.1
East	3.5	70.2	19.2	7.1	0.0	100.0	397	10.2
South	4.0	72.9	15.8	7.3	0.0	100.0	3,499	10.0
Total	3.3	65.9	19.4	11.5	0.0	100.0	7,087	10.1

Not everyone continues studying in secondary-special and higher educational institutions after secondary school. Only 18 percent of men and 25 percent of women age 18-20 and 7 percent of men and 9 percent of women age 21-24 are enrolled in school. Enrollment among men and women age 18-24 living in urban areas is higher than among those living in rural areas.

2.2   Housing Characteristics

In order to assess the socioeconomic conditions of respondents, appropriate information on housing was collected. Table 2.8 presents the data on availability of electricity, source of drinking water, sanitation facilities, type of floor and persons per sleeping room, all of which are determinants of the health status of household members, particularly of children.

As can be seen from Table 2.8, virtually all sampled households in the Kyrgyz Republic are supplied with electricity. The source of drinking water usually determines its quality. Seventy-five percent of households in the Kyrgyz Republic have piped water, mostly piped into the residence. Six percent of the population use water from wells, and 17 percent from rivers. Almost all urban households use piped water (96 percent), almost all of which have the pipes inside. In rural areas, 59 percent of households have piped water, while more than one-fourth of the population uses water from rivers. Almost 80 percent of households in the Kyrgyz Republic are within 15 minutes of the source of their water.

Table 2.6 Educational level of the male household population

Percent distribution of the de facto male household population age seven and over by highest level of education attended, and median number of years of schooling, according to selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Level of education						Number	Median years of schooling
	No education	Primary/ Secondary	Secondary-Special	Higher	Missing	Total		
Age								
7-9	4.2	95.6	0.2	0.0	0.0	100.0	705	1.9
10-14	0.8	99.2	0.1	0.0	0.0	100.0	1,150	5.7
15-19	0.8	79.3	12.9	6.9	0.0	100.0	787	10.2
20-24	0.8	62.4	26.0	10.9	0.0	100.0	685	10.8
25-29	0.6	52.5	35.4	11.5	0.0	100.0	599	10.8
30-34	0.5	46.8	36.8	16.0	0.0	100.0	528	10.8
35-39	0.2	42.4	36.8	20.7	0.0	100.0	594	10.8
40-44	0.4	41.7	38.2	19.8	0.0	100.0	420	10.9
45-49	0.0	46.0	30.4	23.7	0.0	100.0	315	10.9
50-54	0.0	48.3	27.0	24.6	0.0	100.0	179	10.9
55-59	2.1	67.9	14.8	15.3	0.0	100.0	210	10.4
60-64	2.5	64.1	16.5	17.0	0.0	100.0	209	10.1
65+	7.2	71.1	9.2	12.5	0.0	100.0	408	7.5
Residence								
Urban	1.6	55.4	22.7	20.4	0.0	100.0	1,983	10.5
Rural	1.4	74.0	18.0	6.7	0.0	100.0	4,806	10.1
Region								
Bishkek City	0.9	45.9	24.2	29.0	0.0	100.0	766	10.9
North	0.9	71.1	19.8	8.2	0.0	100.0	2,209	10.2
East	2.9	78.8	11.1	7.1	0.0	100.0	380	10.3
South	1.7	70.8	18.9	8.6	0.0	100.0	3,434	10.1
Total	1.4	68.5	19.3	10.7	0.0	100.0	6,789	10.2

Table 2.7 School enrollment

Percentage of the de facto household population age 7-24 years enrolled in school, by age, sex, and residence, Kyrgyz Republic 1997

Age	Male			Female			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
7-17	90.7	89.6	89.9	92.7	89.3	90.2	91.7	89.4	90.0
18-20	39.1	10.5	18.4	47.0	15.5	25.1	43.4	13.0	21.9
21-24	18.3	3.4	7.0	20.3	4.0	9.1	19.4	3.6	8.0

Figure 2.2
School Enrollment by Age and Sex

KRDHS 1997
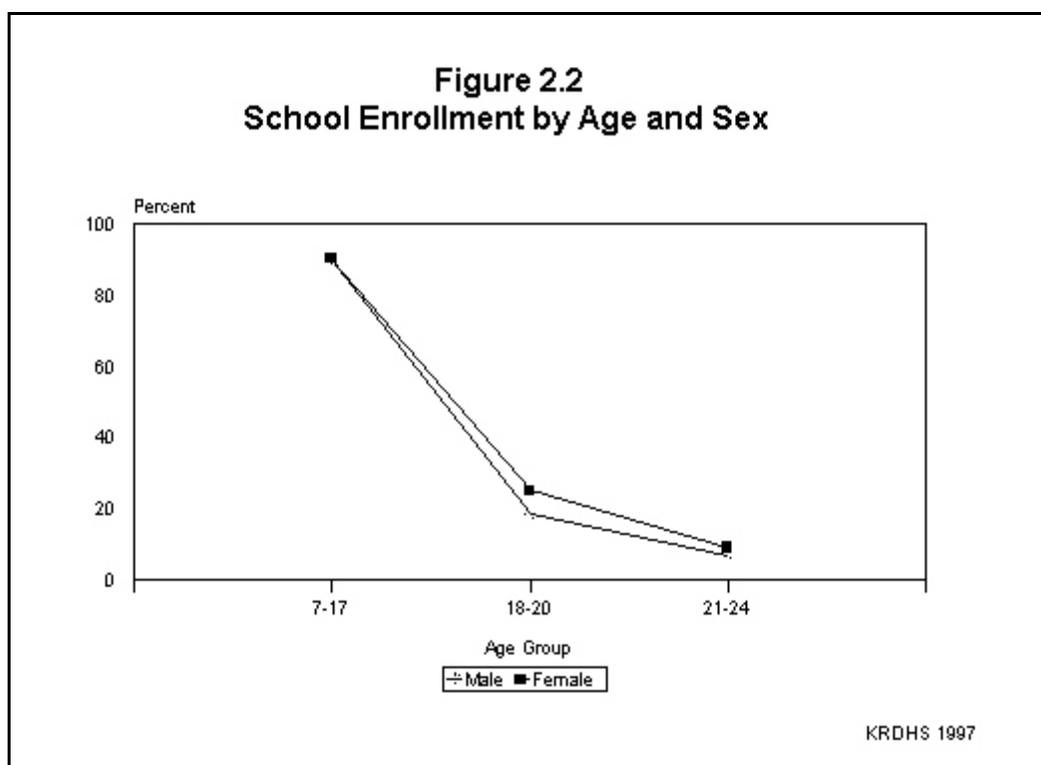
One indicator of sanitary conditions is the type of toilet in a household. In the Kyrgyz Republic, a majority of households (77 percent) have pit toilets (latrines) and 23 percent have flush toilets. In urban areas, 52 percent of households have flush toilets, while in rural areas, 97 percent have pit toilets.

During the interview, interviewers noted the type of material from which the floor in each household was made. As can be seen from the data, 81 percent of households have a wooden floor, 5 percent of households use earth and 12 percent of households use linoleum. In rural areas, floors are mainly made from wood (90 percent) and in urban areas, along with wood (68 percent), people use linoleum (29 percent).

An important indicator of housing conditions is the level of crowding, which was estimated by the number of persons sleeping in one room and the average number of persons per sleeping room. In 88 percent of households 1-2 persons sleep in one room. The average number of persons per sleeping room is significantly higher in rural areas than in urban areas (1.8 and 1.5 percent, respectively).

2.2.1 Household Durable Goods

One criterion of the socioeconomic well-being of a household is ownership of various durable goods (radio, television, telephone, and refrigerator), and means of transport (bicycle, motorcycle, and private car). The presence of a radio and television set in a household is also an indicator of the availability of information to household members.

Table 2.9 shows that urban households are more likely than rural households to have these durable goods, especially, telephones, television sets, and refrigerators. An approximately equal proportion of urban and rural households own radios, bicycles and private vehicles. The higher proportion of rural than urban households owning a motorcycle is due to the greater need for transport in rural areas. Overall, 85 percent of households in the Kyrgyz Republic have television, and 67 percent have refrigerators. Forty-one percent of households have radios and 30 percent have telephones. More than one-fifth of households have a car.

17

Table 2.8 Housing characteristics

Percent distribution of households by housing characteristics, according to residence, Kyrgyz Republic 1997

	Residence		
Characteristic	Urban	Rural	Total
Electricity			
Yes	100.0	99.6	99.8
No	0.0	0.4	0.2
Total	100.0	100.0	100.0
Source of drinking water			
Piped into residence	87.4	27.6	51.9
Public tap	9.2	31.7	22.6
Well in residence	0.9	3.4	2.4
Public well	0.8	5.6	3.7
Spring	0.1	3.6	2.2
River/stream	1.6	27.2	16.8
Pond/lake	0.0	0.1	0.0
Tanker truck	0.0	0.7	0.4
Total	100.0	100.0	100.0
Time to water source (in minutes)			
Within 15 minutes	94.9	67.3	78.5
Median time to source	-	10.1	-
Sanitation facility			
Own flush toilet	51.1	3.1	22.6
Shared flush toilet	0.5	0.0	0.2
Traditional pit toilet	48.2	96.7	77.0
Ventilated improved pit latrine	0.2	0.0	0.1
No facility/bush	0.1	0.1	0.1
Total	100.0	100.0	100.0
Floor material			
Earth/sand	0.3	8.0	4.8
Wood planks	67.8	90.1	81.1
Straw/sawdust	1.1	0.6	0.8
Parquet/polished wood	1.9	0.1	0.8
Linoleum/asphalt	28.8	1.1	12.3
Ceramic tiles	0.0	0.1	0.0
Cement	0.1	0.1	0.1
Total	100.0	100.0	100.0
Persons per sleeping room			
1-2	90.2	86.6	88.1
3-4	7.8	11.0	9.7
5-6	1.0	1.8	1.5
7 +	0.2	0.2	0.2
Missing/Don't know	0.8	0.4	0.6
Total	100.0	100.0	100.0
Mean persons per sleeping room	1.5	1.8	1.7
Number of households	1,491	2,181	3,672

Table 2.9 Household durable goods

Percentage of households possessing various durable consumer goods, by residence, Kyrgyz Republic 1997

	Residence		
Durable goods	Urban	Rural	Total
Radio	41.6	41.0	41.2
Television	87.6	82.5	84.5
Telephone	53.9	13.8	30.1
Refrigerator	83.0	56.2	67.1
Bicycle	10.5	10.2	10.3
Motorcycle	3.4	7.0	5.5
Private car	23.2	20.8	21.8
None of the above	5.3	9.4	7.7
Number of households	1,491	2,181	3,672

2.3 Characteristics of Survey Respondents

2.3.1 Background Characteristics

The information in this section is important for the interpretation of the results of the study. Table 2.10 presents the percent distribution of women 15-49 by age, marital status, residence, region, education level, religion, and ethnicity.

To obtain the age of a respondent, the KRDHS Women's Questionnaire included two questions: "In what month and year were you born?" and "How old were you at your last birthday?" Special attention was given to these questions during the training of the interviewers. Interviewers learned how to use probing techniques for situations in which respondents did not know their date of birth.

As shown in Table 2.10, the percentage of women in five-year age groups declines steadily with increasing age. One exception are women in age group 25-29 (14 percent), the percentage of which is lower than the percentage of women in the following age group 30-34 (16 percent). The majority of the women are married or living with a man (70 percent), but a significant proportion are never-married (22 percent), or are widowed, divorced, or separated (9 percent). Thirty-four percent of women live in urban areas; 67 percent in rural areas.

Table 2.10 Background characteristics of respondents

Percent distribution of women 15-49 by selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Weighted percent	Number of women	
		Weighted	Un-weighted
Age			
15-19	19.3	743	740
20-24	16.9	649	639
25-29	13.8	530	552
30-34	16.4	630	616
35-39	15.0	579	567
40-44	10.7	410	415
45-49	8.0	307	319
Marital status			
Never married	21.5	827	834
Married	66.7	2,566	2,545
Living together	2.8	109	132
Widowed	2.5	95	102
Divorced	5.3	204	199
Not living together	1.2	47	36
Residence			
Urban	33.5	1,290	1,485
Rural	66.5	2,558	2,363
Region			
Bishkek City	13.5	518	893
North	30.9	1,188	1,023
East	5.6	215	770
South	50.1	1,926	1,162
Education			
Primary/Secondary	53.4	2,053	1,929
Secondary-special	129.9	1,151	1,181
Higher	16.7	643	738
Respondent still in school			
Yes	13.1	504	548
No	86.9	3,344	3,300
Religion			
Muslim	86.3	3,323	3,221
Christian	10.7	410	458
Other	0.1	5	7
Not religious	2.8	106	156
Don't know	0.1	4	6
Ethnicity			
Kyrgyz	61.9	2,380	2,560
Russian	10.7	412	493
Kazak	1.8	67	72
Uzbek	18.0	691	439
Korean	0.9	33	23
Dungan	0.9	34	32
Uigur	2.0	77	78
Tatar	1.0	38	31
Ukrainian	0.9	33	33
German	0.6	22	22
Other	1.5	59	65
Total	100.0	3,848	3,848

The percent distribution of the inter viewed women by regions of their residence is as follows: 14 percent live in Bishkek City, 31 percent in the North Region, 6 percent in the East Region (Naryn oblast), and 50 percent in the South Region.

The survey respondents are well educated. All respondents had attended at least primary/secondary school, 30 percent having a secondary-special education and 17 percent having a higher education. Thirteen percent are still in school.

Table 2.11 shows the distribution of women 15-49 by ethnicity, religion, and residence according to region. Sixty-two percent of respondents are ethnic Kyrgyz, 18 percent are ethnic Uzbeks, 11 percent are ethnic Russian. Most of the Russians live in Bishkek City and North Region, while the Uzbek population is mostly concentrated in the South Region of the Kyrgyz Republic.

2.3.2 Educational Level of Respondents

Table 2.12 shows the percent distribution of women by the highest level of education attended according to background characteristics. As will be seen later in the report, differences in the receipt of maternal health care by women are related to differences in education.

Fifty-three percent of respondents have attended primary/secondary school, 30 percent have attended secondary-special school, and 17 percent have had higher education. There are significant differences in education between urban and rural areas and between regions. The proportion of respondents with higher education in urban areas is three times higher than in rural areas. This proportion is also higher in Bishkek City compared to other regions. There is a strong relationship between level of education and ethnicity. Fifty-three percent of Kyrgyz women have primary/secondary education, 29 percent have secondary-special education, and 19 percent have higher education. Among women of Russian ethnicity 30 percent have attended

primary/secondary school, 44 percent have attained a secondary-special level of education, and 27 percent have had higher education. Among Uzbek women 71 percent have attended primary/secondary school, and only 4 percent have had higher education.

Table 2.11 Ethnicity, religion and residence by region

Percent distribution of women 15-49 by ethnicity, religion and residence, according to region, Kyrgyz Republic 1997

Background characteristic	Region				Total
	Bishkek City	North	East	South	
Ethnicity					
Kyrgyz	47.1	66.9	99.5	58.5	61.9
Russian	35.4	15.7	0.2	2.2	10.7
Kazak	3.4	3.4	0.2	0.5	1.8
Uzbek	2.0	1.0	0.0	34.7	18.0
Korean	0.2	0.6	0.0	1.3	0.9
Dungan	0.4	2.7	0.0	0.0	0.9
Uigur	2.9	4.3	0.0	0.6	2.0
Tatar	1.5	0.7	0.0	1.2	1.0
Ukrainian	1.8	1.5	0.0	0.3	0.9
German	0.8	1.5	0.0	0.0	0.6
Other	4.5	1.7	0.0	0.8	1.5
Religion					
Muslim	55.5	80.1	99.1	97.1	86.3
Christian	29.3	17.1	0.2	2.8	10.7
Other	0.6	0.2	0.0	0.0	0.1
Not religious	14.1	2.5	0.5	0.1	2.8
Don't know	0.4	0.1	0.1	0.0	0.1
Residence					
Urban	100.0	21.4	23.6	24.2	33.5
Rural	0.0	78.6	76.4	75.8	66.5
Total	100.0	100.0	100.0	100.0	100.0
Number	518	1,188	215	1,926	3,848

2.3.3   School Attendance and Reasons for Leaving School

Because of the association between education and many other demographic and health indicators, it is interesting to analyze the reasons why women leave school. As shown in Table 2.13, 34 percent of women age 15-24 currently attend school. The main reasons for leaving school are marriage and the perceived sufficiency of the obtained education.

Table 2.12 Level of education

Percent distribution of women by the highest level of education attended, according to selected background characteristics, Kyrgyz Republic 1997

| Background characteristic | Highest level of education | | | Total | Number of women |
	Primary/ Secondary	Secondary-special	Higher		
Age					
15-19	77.0	12.3	10.7	100.0	743
20-24	54.2	30.4	15.4	100.0	649
25-29	42.2	40.4	17.3	100.0	530
30-34	40.9	39.9	19.2	100.0	630
35-39	47.9	32.7	19.4	100.0	579
40-44	51.0	29.5	19.5	100.0	410
45-49	52.5	28.3	19.3	100.0	307
Residence					
Urban	36.2	33.2	30.6	100.0	1,290
Rural	62.0	28.3	9.7	100.0	2,558
Region					
Bishkek City	27.2	30.2	42.6	100.0	518
North	48.2	36.0	15.8	100.0	1,188
East	57.0	32.4	10.6	100.0	215
South	63.2	25.8	11.0	100.0	1,926
Ethnicity					
Kyrgyz	52.9	28.5	18.6	100.0	2,380
Russian	29.3	44.0	26.6	100.0	412
Uzbek	71.4	24.5	4.1	100.0	691
Other	49.2	33.8	17.0	100.0	364
Total	53.4	29.9	16.7	100.0	3,848

2.3.4 Access to Mass Media

During the KRDHS interviews, women were asked about their exposure to the mass media which is an indicator of their access to information about health and family planning.

Table 2.14 shows that 90 percent of women watch TV weekly, while 69 percent read a newspaper at least once a week. Daily radio listening is also widespread at 52 percent. There is little difference by age in access to the mass media. Women in Bishkek City and the North Region have more access to all three types of mass media (56 percent each) than women in the South and East Regions (27 and 20 percent, respectively). There is an association between a respondent's exposure to mass media and her education level; the higher the education level, the more often women watch TV, read newspapers, and listen to the radio. Russian women are more likely than Kyrgyz or Uzbek women to avail themselves of all three media.

2.3.5 Women's Employment Status

Table 2.15 presents information on women's employment status according to age, residence, region, educational level, and ethnicity.

Overall, 57 percent of women age 15-49 are not currently employed and 48 percent have not been employed for the last 12 months. Unemployment is more common among younger women, those living in rural areas, in the East and North Regions, those with a lower education level, and Uzbek and Kyrgyz women. Four percent of the employed women work for less than five days a week and 14 percent of the women are employed only seasonally or occasionally.

Table 2.13 School attendance and reasons for leaving school

Percent distribution of women 15 to 24 by whether attending school and reason for leaving school, according to highest level of education attended and residence, Kyrgyz Republic 1997

Reason for leaving school	Educational attainment			
	Incomplete secondary	Complete secondary	Higher	Total
TOTAL				
Currently attending	46.7	18.6	79.1	34.4
Got pregnant	0.0	0.6	0.1	0.4
Got married	11.0	28.4	1.2	19.9
Take care of younger children	0.4	1.6	1.5	1.3
Family need help	10.0	9.5	0.3	8.5
Need to earn money	4.8	9.9	0.6	7.3
Graduated/Enough school	7.7	12.8	16.8	11.9
Did not pass exams	1.0	6.4	0.0	4.1
Did not like school	9.2	3.3	0.0	4.6
School not accessible	1.1	1.1	0.0	0.9
Applying for school	4.5	4.1	0.0	3.7
Other	2.4	2.1	0.3	2.0
Don't know/missing	1.1	1.5	0.0	1.2
Total	100.0	100.0	100.0	100.0
Number	394	816	179	1,390
URBAN				
Currently attending	60.3	26.2	78.9	48.9
Got pregnant	0.0	1.0	0.2	0.6
Got married	9.3	25.4	0.5	14.7
Take care of younger children	1.7	1.1	2.3	1.6
Family need help	7.7	4.7	0.5	4.3
Need to earn money	4.2	13.3	1.0	7.7
Graduated/Enough school	5.4	9.4	16.0	10.3
Did not pass exams	0.0	9.0	0.0	4.4
Did not like school	6.1	3.9	0.0	3.3
School not accessible	0.0	1.7	0.0	0.8
Applying for school	2.1	1.3	0.0	1.2
Other	2.7	1.7	0.5	1.6
Don't know/missing	0.6	1.2	0.0	0.7
Total	100.0	100.0	100.0	100.0
Number	101	203	115	419
RURAL				
Currently attending	42.1	16.1	79.4	28.1
Got pregnant	0.0	0.4	0.0	0.3
Got married	11.6	29.3	2.4	22.2
Take care of younger children	0.0	1.8	0.0	1.1
Family need help	10.8	11.1	0.0	10.3
Need to earn money	5.0	8.8	0.0	7.0
Graduated/Enough school	8.5	14.0	18.2	12.6
Did not pass exams	1.3	5.6	0.0	3.9
Did not like school	10.3	3.1	0.0	5.1
School not accessible	1.4	0.8	0.0	1.0
Applying for school	5.3	5.1	0.0	4.8
Other	2.3	2.2	0.0	2.1
Don't know/missing	1.3	1.6	0.0	1.4
Total	100.0	100.0	100.0	100.0
Number	294	613	64	971

Table 2.14 Access to mass media

Percentage of women who usually read a newspaper once a week, watch television once a week, or listen to radio daily, by selected background characteristics, Kyrgyz Republic 1997

| Background characteristic | No mass media | Mass media | | | | Number of women |
		Read newspaper weekly	Watch television weekly	Listen to radio daily	All three media	
Age						
15-19	5.0	68.4	87.2	48.2	35.5	743
20-24	5.0	67.2	89.2	51.6	39.5	649
25-29	5.5	71.8	89.4	51.0	39.6	530
30-34	5.5	69.5	87.8	46.9	37.0	630
35-39	3.2	67.5	94.5	54.2	40.7	579
40-44	4.2	68.9	91.2	56.4	42.4	410
45-49	6.3	67.9	90.5	62.6	45.9	307
Residence						
Urban	2.5	78.6	92.9	55.5	46.5	1,290
Rural	6.2	63.7	88.1	50.0	35.7	2,558
Region						
Bishkek City	1.2	89.7	95.6	59.2	56.3	518
North	1.7	88.7	92.8	61.5	56.0	1,188
East	14.9	47.7	76.1	36.4	20.2	215
South	6.8	53.1	87.7	45.6	26.6	1,926
Education						
Primary/Secondary	7.3	56.4	86.0	47.5	29.7	2,053
Secondary-special	3.2	77.4	92.8	53.5	45.6	1,151
Higher	0.5	92.7	96.0	62.8	59.0	643
Ethnicity						
Kyrgyz	6.1	70.0	86.9	49.7	37.9	2,380
Russian	0.6	92.3	97.6	68.7	65.1	412
Uzbek	4.9	46.4	92.1	47.0	25.6	691
Other	2.1	76.1	94.7	56.0	46.0	364
Total	4.9	68.7	89.7	51.9	39.3	3,848

2.3.6 Employer

Table 2.16 shows the percent distribution of currently employed women by type of employer, according to background characteristics. Sixty-one percent of employed women work in state enterprises. 11 percent of women work in private firms. Thirteen percent of women are self-employed and 14 percent work in a family or their own business.

2.3.7 Occupation

Twenty-six percent of employed women work in agriculture (Table 2.17), primarily on state or family land. Women in the South Region are more likely to be working in agriculture mostly on state land, while women in the North Region are mostly working on family land.

Seventy-four percent of employed women are not engaged in agriculture. Almost half work in professional, technical, and managerial occupations, 22 percent in sales and trade, and 14 percent in manual labor. These parameters differ by age, residence, region, and respondent's ethnicity. Significant differences are also seen by education level—women with higher education are engaged mainly in professional and technical fields, with few employed in manual labor.

23

Table 2.15 Employment

Percent distribution of women by whether currently employed and distribution of employed women by continuity of employment, according to background characteristics, Kyrgyz Republic 1997

Background characteristic	Not currently employed		Currently employed					
	Did not work in last 12 months	Worked in last 12 months	All year		Season- ally	Occasion- ally	Total	Number of women
			5+ days per week	<5 days per week				
Age								
15-19	82.6	2.9	5.5	0.6	7.1	1.4	100.0	743
20-24	59.9	14.0	15.0	1.8	8.3	1.0	100.0	649
25-29	41.0	17.7	24.3	4.9	10.5	1.6	100.0	530
30-34	34.6	12.0	29.5	5.1	17.1	1.7	100.0	630
35-39	26.9	8.6	36.5	5.4	21.2	1.3	100.0	579
40-44	29.8	4.0	42.2	6.7	16.2	1.1	100.0	410
45-49	36.2	1.7	38.7	8.0	13.6	1.8	100.0	307
Residence								
Urban	42.2	8.4	37.3	6.1	4.1	2.0	100.0	1,290
Rural	50.1	9.6	18.6	3.1	17.5	1.1	100.0	2,558
Region								
Bishkek City	39.9	6.7	40.3	6.9	4.4	1.8	100.0	518
North	50.0	6.4	25.4	3.4	12.9	1.9	100.0	1,188
East	62.7	4.8	26.1	2.6	3.5	0.4	100.0	215
South	46.2	12.0	20.2	4.0	16.5	1.1	100.0	1,926
Education								
Primary/Secondary	57.4	6.8	12.2	3.8	18.8	1.0	100.0	2,053
Secondary-special	37.1	12.8	34.5	4.7	8.6	2.4	100.0	1,151
Higher	34.3	10.2	48.1	4.0	2.6	0.9	100.0	643
Ethnicity								
Kyrgyz	49.1	9.5	23.4	3.4	13.6	1.1	100.0	2,380
Russian	32.4	7.1	44.7	7.8	5.0	2.9	100.0	412
Uzbek	51.4	11.0	16.4	3.8	16.4	0.9	100.0	691
Other	46.6	5.8	27.6	5.2	12.1	2.8	100.0	364
Total	47.5	9.2	24.8	4.1	13.0	1.4	100.0	3,848

2.3.8 Decisions on Use of Earnings

When the status of women is assessed, their independence in making decisions on the use of their earnings is a valuable indicator. Table 2.18 shows that almost 29 percent of employed women make their own decisions on the use of their earnings, while 53 percent decide together with their husband or partner, and 10 percent make decisions jointly with someone other than a husband. Four percent of women report that their husbands alone decide how to spend their earnings. Independent decision making on use of earnings tends to be higher among women in urban areas (especially Bishkek City), the North Region and among unmarried and Russian women.

2.3.9 Child Care While Working

Preschool age children in the family pose employment obstacles, since child care requires significant time and energy. When child care is provided completely by the mother, her work possibilities are limited.

Table 2.16 Employer

Percent distribution of currently employed women by employer, according to background characteristics, Kyrgyz Republic 1997

_____

| | Employer | | | | | |
Background characteristic	Govern-ment or State enter-prise	Family, own business	Private firm, person	Self-employed	Total	Number of women
Age						
15-19	40.4	19.4	22.3	17.9	100.0	108
20-24	58.0	18.7	11.8	11.4	100.0	169
25-29	57.8	14.0	13.8	14.4	100.0	219
30-34	57.5	16.0	9.2	17.2	100.0	337
35-39	64.8	13.3	10.7	11.3	100.0	373
40-44	67.7	10.1	9.2	13.0	100.0	271
45-49	68.6	13.3	10.6	7.5	100.0	191
Residence						
Urban	62.6	6.5	14.7	16.3	100.0	638
Rural	60.1	19.3	9.4	11.3	100.0	1,030
Region						
Bishkek City	57.2	6.5	21.2	15.1	100.0	277
North	53.2	18.3	13.1	15.4	100.0	517
East	79.8	4.5	2.3	13.4	100.0	70
South	65.8	15.4	7.7	11.1	100.0	804
Education						
Primary/Secondary	51.9	20.2	12.2	15.7	100.0	733
Secondary-special	61.4	12.5	12.3	13.7	100.0	577
Higher	79.2	5.4	8.2	7.2	100.0	358
Ethnicity						
Kyrgyz	63.3	17.6	6.7	12.3	100.0	986
Russian	59.6	5.9	20.3	14.1	100.0	249
Uzbek	60.2	11.9	12.7	15.2	100.0	260
Other	51.5	11.8	23.1	13.6	100.0	174
Total	61.1	14.4	11.4	13.2	100.0	1,668

As Table 2.19 shows, 35 percent of employed women have a child under age six at home. It is notable that the likelihood of a working woman having a child under six years is greater in rural areas (41 percent), the East and South Regions (44 and 42 percent, respectively) and among Kyrgyz and Uzbek women (40 and 42 percent, respectively). Almost half of them is enrolled in agriculture. Only 6 percent of women care for the children themselves, 8 percent are cared for by the husband or partner, and 37 percent are cared for by relatives.

Fifteen percent of children use preschool child care institutions despite the mass shutdown during recent years. Use of institutional child care is greatest in urban areas (34 percent), Bishkek City (40 percent), and among women with higher education (22 percent).

When other children are used as child care providers, the caretaker is much more likely to be a sister (17 percent) than a brother (5 percent). The role of other people (neighbors, servants) in providing child care is not significant.

Table 2.17 Occupation

Percent distribution of currently employed women by occupation and type of agricultural land worked or type of nonagricultural employment, according to background characteristics, Kyrgyz Republic 1997

	Agricultural			Nonagricultural					
Background characteristic	Family land	Rented land	State land	Prof./ tech./ manag.	Sales/ services	Skilled manual	Unskilled manual	Total	Number of women
Age									
15-19	12.9	12.4	22.2	10.2	25.4	14.9	1.9	100.0	108
20-24	13.7	2.0	11.9	37.5	20.1	11.2	3.7	100.0	169
25-29	5.6	3.4	9.0	39.4	27.2	11.1	4.4	100.0	219
30-34	12.0	3.2	12.4	35.3	23.8	7.1	6.2	100.0	337
35-39	10.9	4.9	15.4	39.4	18.9	7.3	3.2	100.0	373
40-44	9.7	1.4	9.2	44.8	21.4	6.2	7.4	100.0	271
45-49	10.2	3.8	6.5	43.3	17.9	5.7	12.6	100.0	191
Residence									
Urban	0.3	0.4	1.0	46.3	32.2	12.1	7.6	100.0	638
Rural	16.9	6.0	18.9	32.5	15.3	5.9	4.5	100.0	1,030
Region									
Bishkek City	0.2	0.0	0.2	44.2	36.9	12.6	5.9	100.0	277
North	13.6	6.1	5.2	37.2	23.9	10.4	3.7	100.0	517
East	4.5	0.0	0.0	65.8	19.6	2.3	7.8	100.0	70
South	12.7	4.0	21.5	33.5	15.5	6.0	6.8	100.0	804
Education									
Primary/Secondary	18.1	7.0	23.2	11.2	21.8	7.5	11.2	100.0	733
Secondary-special	7.2	1.8	4.4	46.6	26.2	12.1	1.7	100.0	577
Higher	0.4	0.7	1.3	78.2	14.8	3.7	0.9	100.0	358
Ethnicity									
Kyrgyz	14.9	2.3	10.8	41.5	20.1	4.2	6.2	100.0	986
Russian	1.5	1.3	1.1	43.0	26.5	21.0	5.5	100.0	249
Uzbek	8.9	7.7	27.6	22.6	20.0	8.4	4.6	100.0	260
Other	1.5	10.4	11.4	32.0	27.2	13.1	4.4	100.0	174
Total	10.6	3.8	12.0	37.8	21.8	8.3	5.7	100.0	1,668

Note: Professional, technical, managerial includes professional, technical, clerical and managerial occupations.

Table 2.18 Decision on use of earnings

Percent distribution of women receiving cash earnings by person who decides on use of earnings, according to background characteristics, Kyrgyz Republic 1997
_____

| | | | Person who decides how earnings are used | | | | |
Background characteristic	Self only	Husband/ partner	Jointly with husband/ partner	Someone else	Jointly with someone	Total	Number
Age							
15-19	22.0	1.5	0.8	26.9	48.8	100.0	104
20-24	30.6	3.7	25.3	12.1	28.3	100.0	168
25-29	32.6	1.9	51.3	2.5	11.8	100.0	217
30-34	26.5	6.9	58.8	0.5	7.4	100.0	332
35-39	25.5	4.8	65.5	0.4	3.7	100.0	370
40-44	30.6	3.5	63.2	0.0	2.7	100.0	264
45-49	38.3	2.4	58.7	0.0	0.6	100.0	187
Residence							
Urban	42.0	1.7	47.1	0.2	9.0	100.0	637
Rural	21.1	5.5	56.6	5.5	11.3	100.0	1,005
Region							
Bishkek City	42.7	1.3	45.5	0.4	10.1	100.0	276
North	35.2	5.8	47.3	2.5	9.2	100.0	495
East	18.8	6.1	69.4	0.0	5.7	100.0	69
South	21.8	3.7	57.5	5.4	11.6	100.0	803
Education							
Primary/Secondary	22.7	3.9	53.5	5.4	14.5	100.0	719
Secondary-special	34.8	4.0	50.7	2.8	7.7	100.0	567
Higher	33.6	4.4	55.2	0.6	6.2	100.0	356
Ethnicity							
Kyrgyz	25.6	4.3	56.7	3.5	9.9	100.0	964
Russian	44.2	2.6	43.3	0.5	9.5	100.0	247
Uzbek	18.4	6.0	58.3	6.0	11.4	100.0	260
Other	44.6	1.9	37.3	3.6	12.6	100.0	172
Marital status							
Not married	60.0	0.4	0.0	9.4	30.2	100.0	422
Currently married	18.6	5.3	71.2	1.4	3.5	100.0	1,221
Total	29.2	4.0	52.9	3.5	10.4	100.0	1,642

Table 2.19 Child care 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 at home by person who cares for child while mother is at work, according to background characteristics, Kyrgyz Republic 1997

	Employed women with:		Child's caretaker while mother is at work													Number of employed women
Background characteristic	No child under six at home	One or more children under six at home	Respond-ent	Hus-band/part-ner	Other rela-tive	Neigh-bor	Serv-ants/ Hired help	Institu-tional care	Other female child	Other male child	Child lives else-where	Not worked since birth[1]	Other	Miss-ing	Total	
Residence																
Urban	75.8	24.2	5.1	5.1	24.2	0.0	3.7	34.7	10.1	0.8	7.9	2.7	0.3	5.3	100.0	638
Rural	58.8	41.2	6.8	8.8	41.3	0.1	0.0	7.8	19.7	6.6	1.3	0.9	1.1	5.7	100.0	1,030
Education																
Primary/Secondary	62.3	37.7	7.3	6.6	35.6	0.0	0.0	9.1	23.2	7.1	2.0	1.3	1.8	5.9	100.0	733
Secondary-special	64.9	35.1	6.4	7.5	40.1	0.1	0.0	19.5	12.4	2.6	3.5	0.9	0.0	6.9	100.0	577
Higher	72.1	27.9	3.4	12.1	33.2	0.0	5.7	22.1	9.6	4.3	4.9	2.6	0.3	2.0	100.0	358
Work status																
For family member	53.9	46.1	7.1	1.9	43.9	0.0	0.0	4.2	27.9	6.6	1.8	2.7	0.0	3.8	100.0	240
For someone else	70.9	29.1	9.8	0.0	36.0	0.0	0.0	20.6	19.5	4.8	3.1	0.0	2.8	3.3	100.0	190
Self-employed	69.7	30.3	14.7	8.2	34.9	0.0	3.2	6.2	16.3	4.1	4.0	2.7	0.4	5.3	100.0	220
Region																
Bishkek City	82.6	17.4	8.4	1.2	27.7	0.0	0.0	41.0	3.6	2.4	9.6	2.4	0.0	3.6	100.0	277
North	68.5	31.5	7.0	9.9	42.4	0.0	0.9	11.0	18.4	1.4	3.1	1.7	0.7	3.6	100.0	517
East	56.5	43.5	6.5	9.3	28.5	0.9	0.0	4.4	22.0	3.7	1.7	2.7	3.6	16.6	100.0	70
South	58.1	41.9	5.7	7.7	36.1	0.0	1.3	14.1	18.0	7.3	2.2	0.9	0.9	5.9	100.0	804
Ethnicity																
Kyrgyz	60.5	39.5	4.8	9.7	36.9	0.1	0.4	14.1	19.7	5.3	3.2	0.9	1.4	3.8	100.0	986
Russian	85.6	14.4	14.9	0.0	41.4	0.0	0.0	32.0	0.0	0.0	3.9	0.0	0.0	7.8	100.0	249
Uzbek	57.8	42.2	9.5	7.1	30.3	0.0	3.9	13.4	14.6	7.1	1.4	2.8	0.0	9.9	100.0	260
Other	74.5	25.5	5.0	0.0	48.1	0.0	0.0	12.4	14.5	2.5	5.1	3.2	0.0	9.2	100.0	174
Occupation																
Agricultural	52.7	47.3	7.2	5.0	40.2	0.0	0.0	3.0	28.3	8.7	1.5	0.0	1.5	4.6	100.0	441
Nonagricultural	69.8	30.2	5.8	9.5	34.8	0.1	1.5	21.5	10.8	3.0	3.9	2.1	0.6	6.2	100.0	1,227
Employment status																
All year, full week	70.4	29.6	4.4	8.2	36.7	0.1	1.2	23.9	11.6	3.0	3.7	1.1	0.7	5.4	100.0	956
All year, part week	70.9	29.1	3.4	23.0	25.5	0.0	4.6	13.9	6.4	3.4	1.8	7.0	0.0	11.0	100.0	158
Seasonal	53.5	46.5	7.7	4.4	40.7	0.0	0.0	3.9	26.7	8.3	1.8	0.0	1.3	5.1	100.0	501
Occasional	68.2	31.8	26.6	8.2	15.6	0.0	0.0	20.7	6.5	0.0	11.7	9.1	1.6	0.0	100.0	54
Total	65.3	34.7	6.3	7.9	36.8	0.0	1.0	14.9	17.1	5.1	3.0	1.4	0.9	5.6	100.0	1,668

Note: Figures may not add to 100.0 due to rounding.
[1] Respondent was employed but had not actually worked since the birth; therefore, current caretaker status is not applicable.

28

CHAPTER 3

FERTILITY

Naken K. Kasiev, Duishe K. Kudayarov and Talaibek S. Builashev

A complete pregnancy history was collected from each woman interviewed in the 1997 KRDHS. Respondents were asked separate questions about pregnancies that resulted in live births, induced abortions (including mini-abortions), miscarriages, and stillbirths. An accounting of live births was achieved by asking separately about the number of sons and daughters living with the respondent, the number living elsewhere, and the number who had died. To encourage complete reporting of pregnancies, all pregnancy intervals of four or more years in duration were probed for intervening pregnancies.

The pregnancy history was collected in reverse chronological order from the most recent to the first pregnancy. Pregnancy outcome (live birth, abortion, miscarriage, or stillbirth) and date (month and year) of termination were recorded for each pregnancy. For each live birth, the sex of the child, survival status, and age (for living children) or age at death (for deceased children) were also collected.

This chapter presents the findings pertaining to live births. Chapter 5 presents the findings pertaining to pregnancy loss.

3.1   Current Fertility

Table 3.1 and Figure 3.1 present age-specific fertility rates for the three-year period preceding the survey.[1] Rates are expressed per 1,000 women. The sum of the age-specific rates, known as the total fertility rate (TFR), is used to summarize the current level of fertility. The TFR is interpreted as the number of children a woman would have by the end of her childbearing years if she were to pass through those years bearing children at the currently observed age-specific rates. Two other summary measures are presented in Table 3.1: the general fertility rate (GFR) and the crude birth rate (CBR). The GFR represents the annual number of births in the population per 1,000 women age 15-44. The crude birth rate is the annual number of births in the population per 1,000 population. The latter two measures are calculated from the birth history data for the three-year period preceding the survey, and the age and sex distribution of the household population.

If fertility were to remain constant at current levels, a woman in the Kyrgyz Republic would give birth to an average of 3.4 children. This national average is the result of two different levels of fertility. Fertility among rural women is higher than among urban women throughout all the childbearing years, resulting in a TFR among rural women that is 1.6 children higher than among urban women. If fertility were to remain constant at current levels, rural women would have 3.9 children, while urban women would have only 2.3 children. Both urban and rural women experience their peak childbearing years during their early twenties (age 20-24). No women age 45-49 reported having a live birth in the previous three years.

---

[1] Numerators for age-specific fertility rates are calculated by summing the number of live births which occurred in the 1-36 months preceding the survey (determined from 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 from the birth date of the mother). 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 3.1 Current fertility

Age-specific and cumulative fertility rates and the general fertility rate and crude birth rate for the three years preceding the survey, by urban-rural residence and ethnicity, Kyrgyz Republic 1997

| Age | Residence | | Ethnicity | | | | Total |
	Urban	Rural	Kyrgyz	Russian	Uzbek	Other	
15-19	55	84	83	(42)	72	(58)	75
20-24	165	283	240	(105)	(352)	(236)	246
25-29	136	204	192	(100)	(227)	(112)	179
30-34	61	143	121	(27)	(137)	(91)	113
35-39	38	51	58	(14)	(40)	(24)	47
40-44	4	18	16	(3)	(8)	(17)	13
45-49	0	0	0	(0)	(0)	(0)	0
TFR 15-49	2.29	3.91	3.56	1.46	4.19	2.69	3.37
TFR 15-44	2.29	3.91	3.56	1.46	4.19	2.69	3.37
GFR	79	137	125	49	146	94	118
CBR	19	29	27	10	33	22	26

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. Rates in parentheses indicate that they are based on fewer than 250 woman-years of exposure.
TFR: Total fertility rate, 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 3.1
Age-Specific Fertility Rates by Ethnicity

KRDHS 1997
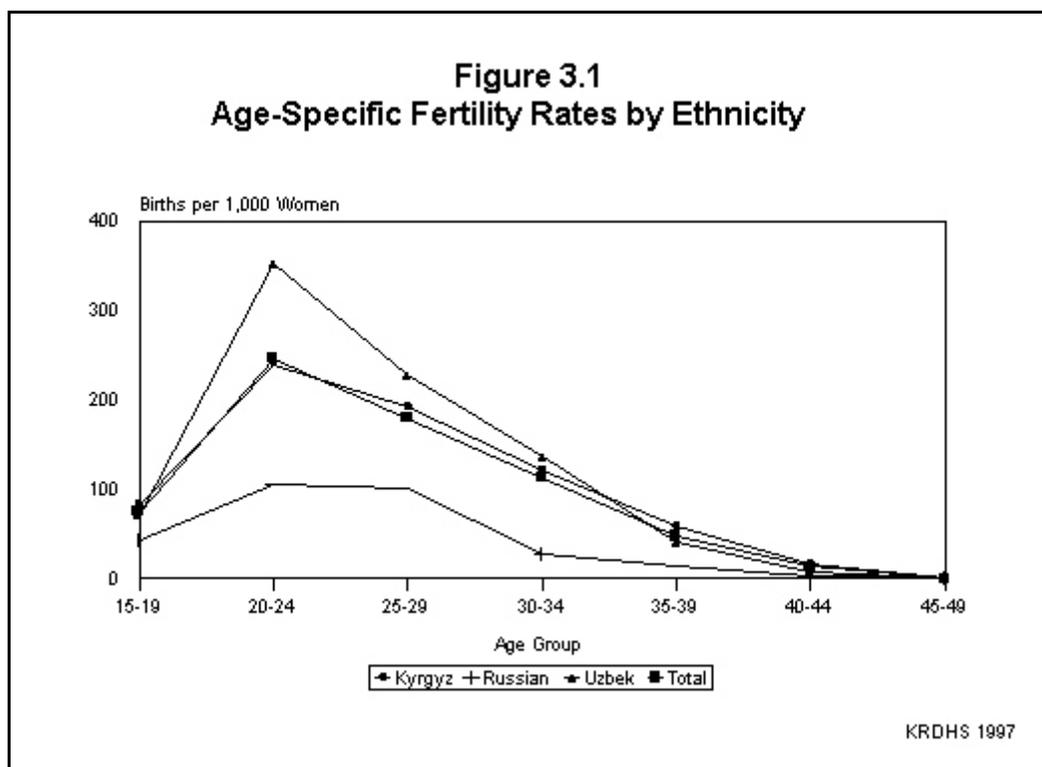
Ethnic differentials in fertility are even greater than the urban/rural differentials. Ethnic Uzbeks achieve the highest TFR of 4.2, which is nearly three children greater than the lowest TFR of 1.5, exhibited by Russian women. Fertility levels among Kyrgyz women fall between the levels exhibited by Uzbek and Russian women, although Kyrgyz women age 15-19 have the highest fertility rate. Women of all ethnicities achieve their peak fertility during their early twenties. Russian women maintain the lowest fertility rate at all childbearing ages.

Table 3.2 and Figure 3.2 present TFRs for the three years preceding the survey by background characteristics. It can be seen that regional variation in fertility is substantial, varying by as much as 2.7 children. The TFR is lowest among women in Bishkek City (1.7 children per woman), highest in the East Region (4.3), and intermediate in the North and South Regions (3.1 and 3.9, respectively).

Women in the Kyrgyz Republic exhibit a childbearing pattern observed in many societies of decreasing fertility with increasing education. The TFR declines steadily from 3.7 children per woman among women with primary or secondary schooling to 3.3 among women with secondary-special schooling and then to 2.4 children per woman among those with higher education.

A crude assessment of trends in fertility over time can be made by comparing the TFR (a measure of current fertility) with the mean number of children ever born (CEB) to women age 40-49 (a measure of completed fertility). If there had been no change in fertility for three or more decades prior to the survey, the TFR and CEB would be nearly the same. The fact that the TFR (3.4 children per woman) is lower than the CEB (4.6) indicates that fertility has declined in the Kyrgyz Republic over the past three decades. The TFR is lower than the CEB among both urban and rural women, in every region, at every educational level, and among ethnic Kyrgyz women and women of other ethnicities.

Table 3.2 also shows the percentage of women who reported themselves to be currently pregnant. Because women at early stages of pregnancy may not yet know they are pregnant, this proportion may be underestimated. Percentages look generally reasonable for the given levels of fertility.

Table 3.2 Fertility by background characteristics

Total fertility rates for the three years preceding the survey, percentage of women currently pregnant, and mean number of children ever born to women age 40-49, by selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Total fertility rate[1]	Percentage currently pregnant[1]	Mean number of children ever born to women age 40-49
Residence			
Urban	2.29	4.04	3.15
Rural	3.91	6.59	5.34
Region			
Bishkek City	1.65	3.47	2.14
North	3.12	4.44	4.72
East	4.34	7.05	5.76
South	3.89	7.00	5.12
Education			
Primary/Secondary	3.70	5.57	5.39
Secondary-special	3.31	6.16	3.70
Higher	2.39	5.52	3.56
Ethnicity			
Kyrgyz			
Bishkek	3.56	6.39	5.29
Russian	1.46	2.49	2.15
Uzbek	4.19	7.28	4.86
Other	2.69	2.24	3.48
Total	3.37	5.74	4.55

[1] Women age 15-49 years

Figure 3.2
Total Fertility Rate by Background Characteristics

KRDHS 1997
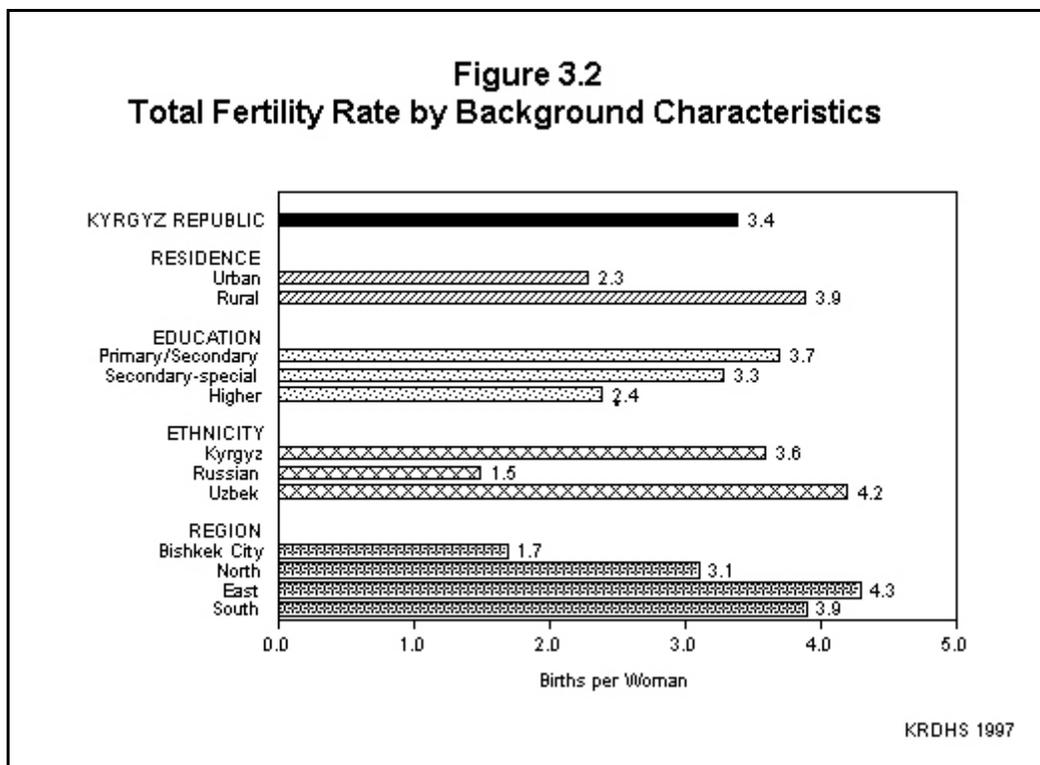
3.2   Fertility Trends

To examine fertility trends more directly, it is possible to look at the ASFRs over time. Age-specific fertility rates can be calculated for the preceding 20 years from the KRDHS data.[2] Table 3.3 presents age-specific fertility rates for five-year periods preceding the survey using data on live births from respondents' pregnancy histories. With the exception of 15-19 year-olds, there is evidence of a decline in fertility for all cohorts for which rates can be calculated. The decline in fertility from 5-9 to 0-4 years prior to the survey increases with age, from an 8 percent decline among 20-24 year-olds to a 38 percent decline among 35-39 year-olds. Figure 3.3 shows a graphical representation of these declines.

Table 3.3 Trends in age-specific fertility rates

Age-specific fertility rates for five-years periods preceding the survey, by mother's age at the time of birth, Kyrgyz Republic 1997

Mother's age	Number of years preceding the survey			
	0-4	5-9	10-14	15-19
15-19	79	55	48	44
20-24	257	278	295	286
25-29	188	214	265	264
30-34	118	155	183	[220]
35-39	44	71	[117]	-
40-44	15	[34]	-	-
45-49	[0]	-	-	-

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

_____

[2] Truncation progressively limits how far into the past fertility rates can be calculated. For example, rates cannot be calculated for women age 40-44 for the period 10-14 years before the survey because these women were over age 50 years at the time of the survey and therefore not interviewed. Partial rates (based on partial exposure time) can be calculated for women age 40-44 for the period 5-9 years before the survey because some of these women were age 45-49 at the time of the survey, and therefore included for interview. Partial rates which are subject to truncation are shown in brackets in Table 3.3.

32

Figure 3.3
Trends in Age-Specific Fertility Rates

Births per 1,000 Women

Years preceding survey
0-4 — 5-9 — 10-14 — 15-19

KRDHS 1997
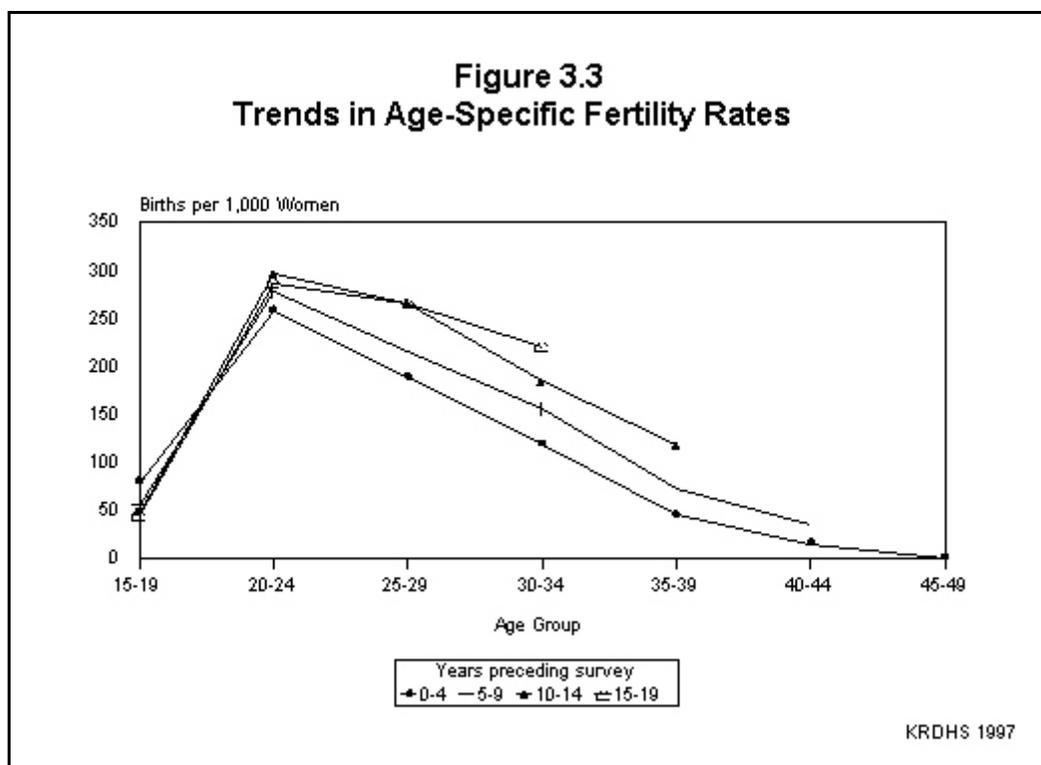
Table 3.4 presents fertility rates for ever-married women by duration since first marriage for five-year periods preceding the survey. The decline in fertility has occurred at all marital durations; however, the decline is greatest among women with longer marital durations. Fertility within the first several years of marriage typically remains less resistant to change, even when fertility is declining, because fertility decline usually begins among older women who want to stop childbearing, not among young couples postponing births. Table 3.4 shows dramatic declines in fertility for all marital durations of five or more years and a 19 percent decline for marriages of less than five years.

3.3 Children Ever Born and Living

Table 3.5 presents the distribution of all women and currently married women by number of children ever born. The greatest difference between the data for currently married women and the total sample occurs among young women, due to the large number of unmarried young women with minimal fertility. Differences at older ages reflect the general fertility-reducing impact of marital dissolution (divorce or widowhood). The table also shows the mean number of children ever born by five-year age groups. The mean number of CEB is 3.1, although the distribution is fairly spread out. The modal number of children among currently married women tends to

Table 3.4 Trends in fertility by marital duration

Fertility rates for ever-married women by duration (years) since first marriage for five-year periods preceding the survey, Kyrgyz Republic 1997

Marriage duration at birth	Number of years preceding the survey			
	0-4	5-9	10-14	15-19
0-4	332	366	408	408
5-9	168	214	257	261
10-14	101	137	182	231
15-19	45	75	155	*
20-24	17	50	*	-
25-29	6	*	-	-

Note: Duration-specific fertility rates are per 1,000 women. An asterisk indicates that a rate is based on fewer than 125 unweighted years of exposure and has been suppressed.

increase by one with each increasing age group up to 35-39. In other words, most 15-19 year-olds have no children (just barely the modal category), most 20-24 year-olds have one child, most 25-29 year-olds have two children, most 30-34 year-olds have three children, and most 35-39 year-olds have four children. This is reflected in the ever increasing mean number of children ever born, which increases steadily from 0.5 among married 15-19 year-olds to 5.1 among 45-49 year-olds.

Table 3.5 Children ever born and living

Percent distribution of all women and of currently married women age 15-49 by number of children ever born (CEB) and mean number ever born and living, according to five-year age groups, Kyrgyz Republic 1997

Age group	Number of children ever born											Total	Number of women	Mean no. of CEB	Mean no. of living children
	0	1	2	3	4	5	6	7	8	9	10+				
ALL WOMEN															
15-19	93.7	6.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	743	0.06	0.06
20-24	34.5	33.3	24.8	6.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0	100.0	649	1.06	0.97
25-29	10.0	24.2	34.3	23.2	6.5	1.6	0.2	0.0	0.0	0.0	0.0	100.0	530	1.98	1.83
30-34	5.5	11.2	22.3	26.7	18.8	9.4	4.3	1.4	0.4	0.0	0.0	100.0	630	2.97	2.73
35-39	3.1	7.7	15.1	19.3	24.3	15.9	9.0	3.9	1.3	0.0	0.4	100.0	579	3.68	3.33
40-44	3.1	5.9	17.3	12.8	17.3	15.4	10.8	8.1	5.6	2.4	1.5	100.0	410	4.28	3.84
45-49	2.7	4.4	15.5	14.0	10.1	14.6	8.3	13.4	8.6	3.1	5.4	100.0	307	4.90	4.25
Total	27.2	14.1	17.9	14.1	10.4	7.0	3.9	2.7	1.6	0.5	0.6	100.0	3,848	2.35	2.12
CURRENTLY MARRIED WOMEN															
15-19	51.9	47.2	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	91	0.49	0.49
20-24	17.5	38.7	33.7	9.5	0.6	0.0	0.0	0.0	0.0	0.0	0.0	100.0	460	1.37	1.27
25-29	5.0	23.6	36.2	26.3	7.2	1.5	0.2	0.0	0.0	0.0	0.0	100.0	458	2.13	1.97
30-34	2.2	8.5	22.4	29.1	20.7	10.1	4.9	1.6	0.5	0.0	0.0	100.0	557	3.18	2.93
35-39	2.0	6.3	13.7	20.7	25.0	16.7	9.3	4.4	1.5	0.1	0.4	100.0	511	3.82	3.46
40-44	0.7	4.2	15.3	12.4	18.7	17.3	11.1	9.5	6.3	2.8	1.8	100.0	342	4.61	4.15
45-49	1.3	4.4	13.2	14.6	10.5	14.4	9.5	14.6	7.6	3.7	6.1	100.0	256	5.08	4.41
Total	6.7	16.2	22.5	19.1	13.8	9.1	5.2	3.8	1.9	0.7	0.9	100.0	2,675	3.08	2.80

A cursory view of the survival status of children can be made by comparing the mean number of children ever born with the mean number surviving, also shown in Table 3.5. Overall, 91 percent of all children born had survived to the time of the survey. The proportion surviving declines only minimally with increasing age of the mother.

3.4   Birth Intervals

The length of birth intervals is an important component of childbearing. Research has shown that children born too close to a previous birth have an increased risk of dying, especially when the interval between births is less than 24 months. Table 3.6 presents the percent distribution of second- and higher-order births in the five years prior to the survey by the number of months since the previous birth. The median

birth interval length is 31.9 months or about 2.7 years. Overall, 30 percent of births occur within 24 months of the previous birth (see Figure 3.4).

Table 3.6 Birth intervals

Percent distribution of non-first births in the five years preceding the survey by number of months since previous birth, according to demographic and socioeconomic characteristics, Kyrgyz Republic 1997

Characteristic	Number of months since previous birth					Total	Median number of months since previous birth	Number of births
	7-17	18-23	24-35	36-47	48+			
Age of mother								
15-19	*	*	*	*	*	100.0	*	1
20-29	17.1	26.8	32.8	12.9	10.4	100.0	25.6	668
30-39	6.7	10.8	25.2	16.4	40.9	100.0	40.2	661
40 +	0.0	4.7	19.1	26.6	49.6	100.0	47.2	62
Birth order								
2-3	13.6	22.4	29.7	13.2	21.1	100.0	29.2	868
4-6	8.4	12.7	25.6	16.5	36.9	100.0	37.5	451
7 +	3.8	3.3	34.0	30.0	28.9	100.0	38.2	73
Sex of prior birth								
Male	11.0	17.9	28.8	15.5	26.7	100.0	32.3	671
Female	11.8	18.5	28.3	14.9	26.5	100.0	31.6	721
Survival of prior birth								
Deceased	44.4	22.0	17.7	5.6	10.3	100.0	19.6	120
Still living	8.3	17.9	29.6	16.1	28.1	100.0	32.9	1,272
Residence								
Urban	11.8	16.5	23.2	17.2	31.3	100.0	34.1	315
Rural	11.3	18.8	30.1	14.6	25.2	100.0	31.4	1,076
Region								
Bishkek City	13.2	14.7	18.6	15.5	38.0	100.0	38.4	75
North	12.5	18.9	24.6	13.2	30.8	100.0	31.7	386
East	14.2	13.8	30.6	15.9	25.5	100.0	31.2	104
South	10.4	18.8	31.1	16.0	23.7	100.0	31.8	826
Education								
Primary/Secondary	12.1	17.3	30.1	15.5	25.0	100.0	31.7	715
Secondary-special	10.6	20.0	31.2	13.3	25.0	100.0	31.0	494
Higher	11.0	17.1	15.5	19.0	37.4	100.0	39.5	182
Ethnicity								
Kyrgyz	12.4	17.6	27.7	16.2	26.0	100.0	31.5	988
Russian	0.0	23.4	17.5	2.1	57.0	100.0	-	27
Uzbek	8.4	19.6	33.3	11.9	26.8	100.0	32.5	292
Other	14.0	19.2	25.7	17.9	23.2	100.0	31.0	84
Total	11.4	18.2	28.6	15.2	26.6	100.0	31.9	1,391

Note: First births are excluded. The interval for multiple births is the number of months since the preceding pregnancy that ended in a live birth. An asterisk indicates that a rate is based on fewer than 25 unweighted years of exposure and has been suppressed.

Nearly three-quarters (71 percent) of closely spaced births which occurred in the previous five years were to women in their twenties. As many as 44 percent of births to women in their twenties were born

within 24 months of the previous birth. Because these are young women, the lowest birth orders (2 or 3 births) also show the greatest likelihood of being born soon after the previous birth. Births which occur after a prior death are more than twice as likely as births following a living child to be born within 24 months. Aside from age of the mother, parity, and survival status of the previous birth, the distribution of birth interval lengths is fairly similar across the other background characteristics shown in the table. The shortest median birth intervals occur regarding births to women in their twenties, second and third order births, and births following a previous death.

Figure 3.4
Percent of Non-First Births Born Within
24 Months of Previous Birth

Note: Based on births in the five years preceding the survey.

KRDHS 1997
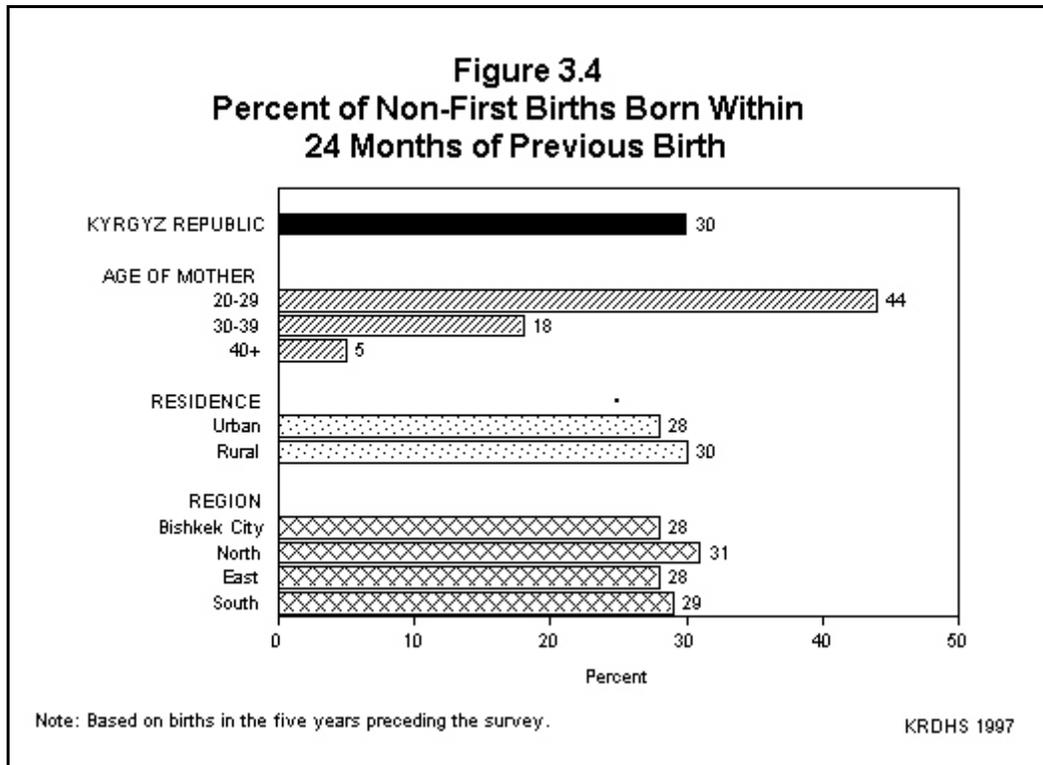
It should be noted that while births to mothers in Bishkek City exhibit a longer median birth interval than births to mothers in other regions, these births are no less likely than those in other regions to be born within 24 months of the previous birth. The longer median interval among mothers in Bishkek City (38 months) is due to more births occurring at the longest interval lengths (four or more years) than at intermediate interval lengths (two or three years), not to fewer births occurring at the shortest interval lengths (28 percent of births to mothers in Bishkek City were born within 24 months of the previous birth). The same can be said of the longer median birth interval among births to mothers with higher education. While they are more likely to have births at the longest interval lengths, they are not less likely to have births at the shortest intervals.

3.5   Age at First Birth

The age at which childbearing begins has important demographic consequences for society as a whole as well as for the health and welfare of women and children. Early initiation into childbearing is generally associated with large family size and rapid population growth when family planning is not widely practiced.

Table 3.7 presents the percent distribution of women by age at first birth according to current age. The median age at which women begin childbearing has been holding steady at around 21.6. Most women have their first birth while in their early twenties, although about 20 percent of women give birth before age 20; one-third of 20-24 year-olds have given birth before age 20.

Table 3.7 Age at first birth

Percent distribution of women 15-49 by age at first birth, according to current age, Kyrgyz Republic 1997

| Current age | Women with no births | Age at first birth | | | | | | Total | Number of women | Median age at first birth |
		<15	15-17	18-19	20-21	22-24	25+			
15-19	93.7	0.0	1.4	4.9	na	na	na	100.0	743	a
20-24	34.5	0.0	4.2	32.4	23.4	5.4	na	100.0	649	a
25-29	10.0	0.0	1.6	21.7	35.8	23.8	7.2	100.0	530	21.5
30-34	5.5	0.0	2.3	19.0	31.2	28.5	13.6	100.0	630	21.8
35-39	3.1	0.2	1.0	18.4	32.1	29.9	15.3	100.0	579	21.9
40-44	3.1	0.0	2.5	21.5	30.6	28.9	13.5	100.0	410	21.7
45-49	2.7	0.0	5.3	22.5	28.5	25.0	16.0	100.0	307	21.4

na = Not applicable
a Omitted because less than 50 percent of the women in the age group x to x+4 have had a birth by age x

While the median age at first birth does not vary greatly by age cohort, there is some variability by background characteristics of respondents. Table 3.8 presents the median age at first birth for cohorts age 25 and above across background characteristics. Urban women have a median age at first birth (22.2) that is nearly a year older than rural women (21.5). Women in the North, East and South Regions all exhibit a median age of 21.6, while women in Bishkek City marry an average of one year later (22.8). The educational differentials are as expected—women initiate childbearing later as their educational level increases. The median age at first birth increases from 20.9 among women with primary education, to 22.0 among secondary-special women, and then to 24.0 years among women with higher education.

3.6   Pregnancy and Motherhood Among Women Age 15-19

Fertility among women age 15-19 warrants special attention because young mothers and their children are at high risk of encountering social and health problems. There has been much research done on this topic, but the causality of the problems has proven difficult to identify. Children born to young mothers are associated with higher levels of illness and mortality during childhood than are children born to older mothers.

Table 3.9 shows the percentage of women age 15-19 who are mothers or are pregnant with their first child. Early childbearing is not very prevalent in the Kyrgyz Republic; 9 percent of women age 15-19 have begun childbearing (have already given birth, or are pregnant with their first child at the time of the survey). However, giving birth at age 19 is not uncommon; 28 percent of women age 19 have given birth or are pregnant with their first child.

Table 3.10 indicates that having more than one child before the age of 20 is highly uncommon in the Kyrgyz Republic.

Table 3.8 Median age at first birth

Median age at first birth among women 25-49, by current age and selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Current age					Women age 25-49
	25-29	30-34	35-39	40-44	45-49	
Residence						
Urban	21.6	22.2	22.4	22.2	22.6	22.2
Rural	21.5	21.6	21.7	21.4	20.7	21.5
Region						
Bishkek City	22.5	22.7	23.3	22.5	23.0	22.8
North	21.7	21.9	21.7	20.9	21.4	21.6
East	21.2	22.2	22.0	21.3	20.4	21.6
South	21.3	21.6	21.8	21.8	21.1	21.6
Education						
Primary/Secondary	21.0	20.7	21.1	20.9	20.5	20.9
Secondary-special	21.7	22.1	22.3	22.1	21.7	22.0
Higher	23.2	24.1	23.9	24.0	24.1	23.9
Ethnicity						
Kyrgyz	21.6	21.8	21.7	21.4	21.2	21.6
Russian	21.7	21.1	22.7	22.5	22.7	22.3
Uzbek	21.3	21.8	21.8	22.2	20.6	21.6
Other	21.4	23.7	23.3	21.5	21.4	22.1
Total	21.5	21.8	21.9	21.7	21.4	21.7

Note: The medians for cohorts 15-19 and 20-24 could not be determined because half the women had not had a birth before reaching age 15 and age 20, respectively.

Table 3.9 Pregnancy and motherhood among women age 15-49

Percentage of women age 15-19 who are mothers or pregnant with their first child, by selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Percentage who are:		Percentage who have begun child-bearing	Number of women
	Mothers	Pregnant with first child		
Age				
15	0.0	0.0	0.0	175
16	0.0	0.4	0.4	161
17	1.7	5.0	6.7	126
18	9.0	5.7	14.7	138
19	22.7	5.5	28.2	143
Residence				
Urban	3.8	1.5	5.3	226
Rural	7.5	3.7	11.2	517
Region				
Bishkek City	4.4	4.4	8.8	79
North	5.4	1.5	6.9	226
East	8.1	4.1	12.2	48
South	7.0	3.6	10.6	390
Education				
Primary/Secondary	6.1	3.4	9.6	573
Secondary-special	6.9	2.6	9.5	91
Higher	7.3	0.7	8.1	79
Ethnicity				
Kyrgyz	7.4	2.5	9.9	467
Russian	2.6	4.4	7.1	64
Uzbek	4.2	5.3	9.5	147
Other	7.0	0.9	7.9	65
Total	6.3	3.1	9.4	743

Table 3.10 Children born to women age 15-19

Percent distribution of women age 15-19 by number of children ever born (CED), according to single year of age, Kyrgyz Republic 1997

Age	Number of children ever born			Total	Mean number of CEB	Number of women
	0	1	2+			
15	100.0	0.0	0.0	100.0	0.00	175
16	100.0	0.0	0.0	100.0	0.00	161
17	98.3	1.7	0.0	100.0	0.02	126
18	91.0	9.0	0.0	100.0	0.09	138
19	77.3	22.1	0.6	100.0	0.23	143
Total	93.7	6.2	0.1	100.0	0.06	743

CHAPTER 4

CONTRACEPTION

Talaibek S. Builashev, Jumabubu A. Doskeeva and Maken S. Mysyraliev

A primary function of family planning programs is to advocate conscious entry into parenthood for both men and women, i.e., to grant families the right to define their desired number of children and provide them the means to achieve that goal. Family planning involves the control of reproductive behavior, including conception, preservation of the fetus, and childbearing, as well as prevention of conception and interruption of pregnancy. Family planning not only helps couples to avoid undesired pregnancies, but also allows them to control the timing of their childbearing. By controlling the time they enter into parenthood, the time they stop childbearing, and the intervals between births, couples can achieve their ultimate desired family size. Family planning has positive effects on the overall health of both mother and child, and is also a contributing factor in the reduction of maternal and infant mortality, and secondary sterility. The efficacy of family planning depends on people's knowledge of methods and on the availability of methods to meet the varying needs of a wide spectrum of potential users. Availability of methods, in turn, depends on the quality and quantity of service providers and on the availability of financial and technical resources.

Family planning topics addressed in this chapter include knowledge of contraceptive methods, sources of supply, use of methods in the past and present, reasons for nonuse, desire to use in the future, and attitudes and exposure to family planning messages. These data can serve as an information base for the Ministry of Health and family planning organizations to better define the need for contraceptives and better define the allocation of resources.

4.1   Knowledge of Contraceptive Methods

Determining levels of knowledge and use of contraceptive methods was one of the major objectives of the KRDHS. Data on contraceptive knowledge were collected by asking the respondent to name ways or methods by which a couple could delay or avoid pregnancy. If the respondent failed to mention a particular method spontaneously, the interviewer described the method and asked if she recognized it. The respondent was also asked whether she had ever used each method. Current use of contraception was determined by asking whether the respondent (or her partner) was currently using a method, and if so, which one.

Contraceptive methods include both modern and traditional methods. Modern methods include the pill, IUD, injectables, female sterilization, and the barrier methods (diaphragm, foam, jelly, and condom). Traditional methods include periodic abstinence (rhythm method), withdrawal, and vaginal douching.

Information on knowledge of contraceptive methods is presented in Table 4.1 for all women, for currently married women,[1] and for women who have never had sexual intercourse. Knowledge of at least one method of contraception is nearly universal (97 percent). Also, 97 percent of respondents know at least one modern method and 69 percent know at least one traditional method. Women know, on average, five methods of contraception. Currently married women know an average of six methods, while women who have never had sex know an average of three methods.

---

[1] The currently married category includes women in both formal unions (civil or religious) and informal unions (living together).

Table 4.1 Knowledge of contraceptive methods

Percentage of all women, of currently married women, and of women who have never had sex who know specific contraceptive methods, Kyrgyz Republic 1997

Contraceptive method	All women	Currently married women	Women who never had sex
Any method	97.1	99.8	87.6
Any modern method	97.1	99.8	87.3
Pill	67.7	73.3	49.0
IUD	95.6	99.6	81.5
Injectables	58.0	67.1	29.6
Diaphragm/Foam/Jelly	25.8	29.9	11.2
Condom	81.1	85.2	65.8
Female sterilization	51.2	59.3	23.6
Any traditional method	68.9	80.8	26.6
Periodic abstinence	52.8	60.8	22.2
Withdrawal	56.3	67.5	15.8
Douche	11.8	14.9	2.1
Other methods	1.5	1.7	0.4
Any traditional/folk method	69.0	80.8	26.6
Number of respondents	3,848	2,675	814
Mean number of methods	5.0	5.6	3.0

Note: All women includes 7 unmarried sexually active women.

The most commonly known method is the IUD (known by 96 percent of women). The condom and the pill are the next most commonly known methods, known by 81 and 68 percent of women, respectively. The lesser known modern methods are still known by a significant proportion of women—58 percent have knowledge of injectables, 51 percent have knowledge of female sterilization, and 26 percent know of vaginal barrier methods such as the diaphragm, foam or jelly. The data in Table 4.1 show that knowledge of all methods is higher among currently married women than among women who have never had sex. Eighty-two percent of women who have never had sex know of the IUD and two-thirds know of the condom. For purposes of communicating family planning information, women of reproductive age who have not yet engaged in sexual intercourse are as important an audience as sexually active women because these women are certain to engage in sexual relations in the near future.

Periodic abstinence and withdrawal are traditional methods known by 61 and 68 percent of currently married women, respectively. Traditional methods are not as commonly known among women who have never had sex (22 percent have heard of periodic abstinence and 16 percent have heard of withdrawal).

Table 4.2 presents the percentage of currently married women who know of at least one method of contraception (modern or traditional) and the percentage who know of at least one modern method, by background characteristics. Virtually all currently married women know of at least one modern method of contraception. This level of knowledge includes women of all ages, all regions of the country, all educational levels, and all ethnicities.

Table 4.2 Knowledge of contraceptive methods by background characteristics

Percentage of currently married women who reported having heard of at least one contraceptive method and at least one modern method, by selected background characteristics, Kyrgyz Republic 1997

| Background characteristic | Knowledge of contraception | | Number of women |
	Knows any method	Knows modern method	
Age			
15-19	99.1	97.4	91
20-24	100.0	100.0	460
25-29	99.3	99.3	458
30-34	99.8	99.8	557
35-39	100.0	100.0	511
40-45	100.0	100.0	342
45-49	100.0	100.0	256
Residence			
Urban	99.9	99.9	856
Rural	99.8	99.7	1,819
Region			
Bishkek City	99.8	99.8	349
North	99.9	99.9	836
East	99.8	99.8	152
South	99.8	99.7	1,338
Education			
Primary/Secondary	99.7	99.6	1,314
Secondary-special	99.8	99.8	908
Higher	100.0	100.0	452
Ethnicity			
Kyrgyz	99.8	99.8	1,632
Russian	100.0	100.0	300
Uzbek	100.0	99.7	504
Other	99.1	99.1	240
Total	99.8	99.8	2,675

4.2   Ever Use of Contraception

All respondents who had heard of a method of contraception were asked whether they (or a partner) had ever used the method; each method was inquired about separately. Results are presented in Table 4.3 for all women and for currently married women by five-year age groups.

Overall, 83 percent of currently married women have used a method of contraception at some time in their life. Sixty-four percent of all women age 15-49 have used a method at some time. Levels of ever-use among all women are somewhat lower than among currently married women because the former includes women who are not sexually active; the most significant differential is among 15-19 year-old women. While 39 percent of currently married 15-19 year-olds have used a method at some time, only 6 percent of all 15-19 year-olds have done so; however, only 14 percent of all 15-19 year-olds have ever had sex.

Table 4.3 Ever use of contraception

Percentage of all women and of currently married women who have ever used any contraceptive method, by specific method and age, Kyrgyz Republic, 1997

Age	Any method	Modern method							Traditional method					Any trad./ folk method	Number of women
		Any modern method	Pill	IUD	Inject-ables	Con-dom	Female sterili-zation	Other modern method	Any traditional method	Periodic absti-nence	With-drawal	Douche	Any folk method		
ALL WOMEN															
15-19	6.3	4.4	1.2	1.8	0.0	2.2	0.0	0.0	3.6	1.6	3.0	0.1	0.0	3.6	743
20-24	51.8	43.5	5.8	32.5	1.2	19.9	0.0	0.9	26.5	6.6	20.3	5.7	0.0	26.5	649
25-29	78.7	68.7	13.6	55.6	4.2	29.2	0.6	0.5	41.5	16.6	27.9	9.0	0.4	41.7	530
30-34	86.1	81.2	12.0	74.6	3.6	27.1	0.6	1.1	42.2	15.7	29.2	9.9	0.5	42.2	630
35-39	87.9	84.0	14.5	76.4	5.4	23.9	1.7	2.4	40.9	16.9	26.1	10.4	0.3	40.9	579
40-44	85.3	80.7	13.4	70.4	3.8	20.4	5.3	5.5	43.3	21.3	26.0	15.9	2.1	44.3	410
45-49	81.9	76.3	12.2	63.8	3.2	25.7	4.7	3.5	45.8	18.0	26.6	17.9	0.9	46.6	307
Total	63.7	58.3	9.6	49.8	2.9	20.1	1.4	1.6	32.2	12.5	21.5	8.5	0.5	32.4	3,848
CURRENTLY MARRIED WOMEN															
15-19	39.2	26.5	4.8	14.9	0.3	12.2	0.0	0.0	22.3	7.8	17.0	1.2	0.0	22.3	91
20-24	66.6	56.0	7.4	42.5	1.7	25.0	0.0	1.3	33.3	8.1	25.6	7.7	0.0	33.3	460
25-29	84.4	73.9	14.7	61.5	4.8	31.4	0.6	0.6	45.1	17.0	31.4	9.8	0.4	45.3	458
30-34	90.5	86.5	12.9	80.9	4.1	28.5	0.5	1.1	44.5	16.4	30.6	10.9	0.6	44.5	557
35-39	91.8	87.9	14.9	80.2	6.0	25.5	1.8	2.5	43.3	17.3	28.4	10.8	0.3	43.3	511
40-44	90.5	85.8	15.7	74.9	4.0	21.7	6.1	5.4	47.2	23.0	28.7	17.1	2.5	48.3	342
45-49	85.0	80.7	12.9	68.6	3.7	26.8	5.4	4.2	46.5	19.2	27.7	16.5	0.4	47.0	256
Total	83.3	76.7	12.7	66.7	4.0	26.2	1.8	2.1	42.2	16.1	28.5	11.2	0.6	42.5	2,675

The women most likely to have used a modern method of contraception at sometime are those age 30-44 (among both currently married and all women). By far the most widely used method is the IUD. Overall, 50 percent of all women age and 67 percent of currently married women have used an IUD at some time. Among currently married women in their thirties, 80 percent have used an IUD. Condoms are the next most commonly used modern method with 26 percent of currently married women having used a condom. Pills are the third most commonly used modern method with 13 percent of currently married women having used them at some time. Other modern methods (injectables, diaphragm and female sterilization) have been used by only 4 percent of married women.

While more women have used modern methods than traditional methods, many women have in fact used a traditional method at some time. Overall, 42 percent of currently married women have used a traditional method at some time in their life, while 32 percent of all women have done so.

Withdrawal and periodic abstinence are the traditional methods most likely to have been used by women at some time in their life. Twenty-nine percent of married women have used withdrawal, and 16 percent have used periodic abstinence. Eleven percent of currently married women have used vaginal douching as a method of contraception.

4.3   Current Use of Contraception

Table 4.4 presents levels of current use of contraception for all women and for currently married women by five-year age groups. Figure 4.1 shows the distribution of currently married women by method currently used.

One out of every three women of reproductive age (35 percent) is currently using a modern method of contraception, while 8 percent are using a traditional method. Among currently married women, half (49 percent) are using modern methods of contraception and 11 percent are using traditional methods.

The IUD is by far the most commonly used method—38 percent of currently married women are using the IUD. Other modern methods of contraception account for only a small amount of use among currently married women: condoms (6 percent), and pills, injectables and female sterilization (each 2 percent or less). Thus, the practice of family planning in the Kyrgyz Republic places high reliance on a single method, the IUD, although the pill, condoms, injectables and female sterilization are widely known (known to at least half of all women). As the goal of the family planning program is to provide each woman with a choice of safe and effective methods, more effort should be made to provide information and access to the range of methods. For example, women who want no more children and want to avoid any risk of childbearing may want to use female sterilization rather than the IUD.

Use of modern methods of contraception increases steadily by age, peaking at age 35-39 (59 percent of currently married women) and then declines. Use of traditional methods remains relatively constant over all ages. Of course, the desire to avoid pregnancy varies greatly over the course of a woman's reproductive life; use of contraception in relation to age and in the context of fertility preferences is discussed in Chapter 7.

Levels of contraceptive use by background characteristics of respondents are presented in Table 4.5 and Figure 4.2 for currently married women. While there is some variation in levels of use, Table 4.5 shows that the level of modern contraceptive use observed for the population as a whole (49 percent) is generally maintained across background characteristics of respondents. The most notable variations in usage of modern methods are the higher levels seen among urban women, women in Bishkek City, and Russian women.

Table 4.4 Current use of contraception

Percent distribution of all women and of currently married women who are currently using a contraceptive method by specific method, according to age, Kyrgyz Republic 1997

Age	Any method	Modern method							Traditional method				Not currently using	Total	Number of women
		Any modern method	Pill	IUD	Inject-ables	Con-dom	Female sterili-zation	Other modern method	Any traditional method	Periodic absti-nence	With-drawal	Douche			
						ALL WOMEN									
15-19	3.9	2.9	0.1	1.8	0.0	0.9	0.0	0.0	1.1	0.5	0.6	0.0	96.1	100.0	743
20-24	35.7	28.9	0.9	22.5	0.2	5.2	0.0	0.0	6.8	1.6	4.2	1.1	64.3	100.0	649
25-29	50.3	41.2	1.4	33.4	0.4	5.1	0.6	0.3	9.0	2.5	5.6	1.0	49.7	100.0	530
30-34	63.5	52.7	2.4	41.8	2.0	5.7	0.6	0.2	10.8	2.7	5.7	2.4	36.5	100.0	630
35-39	64.1	54.8	2.3	43.8	2.1	4.8	1.7	0.0	9.3	2.6	6.0	0.8	35.9	100.0	579
40-44	55.5	45.0	0.7	34.1	1.0	3.8	5.3	0.0	10.5	5.4	3.8	1.3	44.5	100.0	410
45-49	38.8	31.8	0.6	22.7	1.1	2.8	4.7	0.0	7.0	1.4	4.5	1.1	61.2	100.0	307
Total	42.8	35.3	1.2	27.6	0.9	4.1	1.4	0.1	7.5	2.2	4.2	1.1	57.2	100.0	3,848
						CURRENTLY MARRIED WOMEN									
15-19	29.3	20.5	0.0	14.9	0.3	5.4	0.0	0.0	8.8	4.1	4.6	0.0	70.7	100.0	91
20-24	48.7	39.2	1.3	30.4	0.3	7.3	0.0	0.0	9.5	2.1	5.9	1.5	51.3	100.0	460
25-29	56.9	46.5	1.6	37.6	0.5	5.9	0.6	0.4	10.3	2.8	6.3	1.2	43.1	100.0	458
30-34	69.9	57.7	2.7	45.9	2.2	6.2	0.5	0.2	12.2	3.1	6.4	2.7	30.1	100.0	557
35-39	69.5	59.0	2.6	46.8	2.4	5.5	1.8	0.0	10.5	2.8	6.8	0.9	30.5	100.0	511
40-44	64.2	51.6	0.8	38.9	1.2	4.6	6.1	0.0	12.6	6.5	4.6	1.5	35.8	100.0	342
45-49	45.8	37.4	0.7	26.7	1.3	3.3	5.4	0.0	8.5	1.7	5.4	1.3	54.2	100.0	256
Total	59.5	48.9	1.7	38.2	1.3	5.7	1.8	0.1	10.7	3.2	6.0	1.5	40.5	100.0	2,675

Figure 4.1
Use of Specific Contraceptive Methods
Among Currently Married Women

IUD 38%
Condom 6%
Other modern 3%
Traditional/folk 11%
Pill 2%
Not currently using 40%

KRDHS 1997
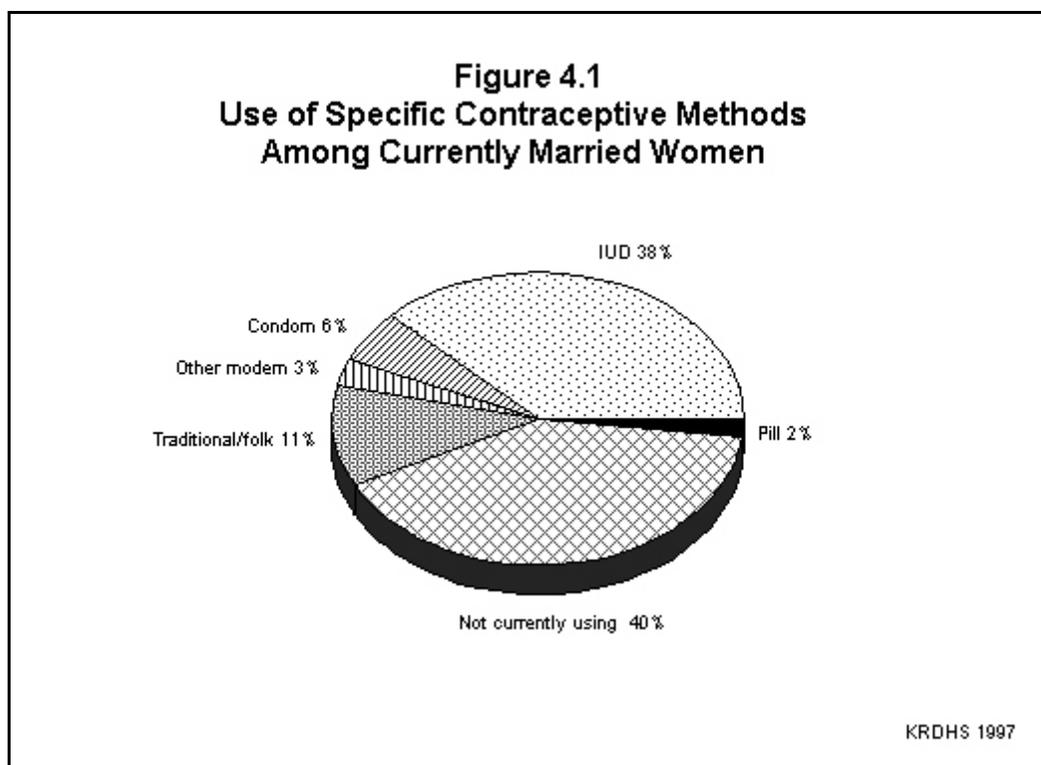
A majority of women in Bishkek City report themselves to be using a modern method of contraception (60 percent). Women in Bishkek City also exhibit the lowest fertility levels. Levels of contraceptive use in the other regions of the country do not vary to the degree that might be expected from the fertility differentials by region. A more complete investigation of regional fertility differentials would have to consider factors such as age at marriage, breastfeeding practices, and induced abortion, in addition to the use of contraception.

Unlike many other countries, women with less education are no less likely to be using a method of contraception than women with more education. Women of Kyrgyz, Uzbek and other ethnicities are all equally likely to be using a modern method of contraception (48 percent). Women of Russian ethnicity are somewhat more likely than other women to be using a modern method (58 percent). The level of contraceptive use does increase with an increasing number of living children, but reaches its maximum fairly quickly. Women with four or more children are as likely to be using a modern method as women with two or three children.

Differentials in the method mix are largely overshadowed by heavy reliance on the IUD among women of all background characteristics (with the exception of those with one or no children). However, women with higher than average levels of use (urban women, women in Bishkek City, and Russian women) exhibit the broadest method mix. It is these women who show higher levels of condom and pill use. Sixteen percent of currently married women in Bishkek City report that they are currently using condoms, compared with 5 percent or less in other regions. Another 5 percent of women in Bishkek City report that they are currently using the pill, compared with 1-2 percent in other regions. The method mix among women of Russian ethnicity and urban women is similar to that of women in Bishkek City.

47

Table 4.5 Current use of contraception by background characteristics

Percent distribution of currently married women by contraceptive method currently used, according to selected background characteristics, Kyrgyz Republic 1997

Age	Any method	Modern method							Traditional method				Not currently using	Total	Number of women
		Any modern method	Pill	IUD	Inject-ables	Con-dom	Female sterili-zation	Other modern method	Any traditional method	Periodic absti-nence	With-drawal	Douche			
Residence															
Urban	65.8	55.0	3.0	37.6	1.1	10.6	2.4	0.2	10.8	5.4	3.7	1.7	34.2	100.0	856
Rural	56.6	46.0	1.2	38.4	1.5	3.4	1.5	0.1	10.6	2.1	7.1	1.4	43.4	100.0	1,819
Region															
Bishkek City	68.9	59.6	5.0	33.3	1.2	15.8	3.8	0.5	9.3	6.5	1.0	1.8	31.1	100.0	349
North	59.2	50.3	1.6	40.5	1.6	4.5	1.9	0.1	8.9	3.4	2.8	2.7	40.8	100.0	836
East	54.0	51.6	0.9	43.5	3.3	2.0	1.8	0.0	2.4	1.8	0.2	0.4	46.0	100.0	152
South	58.0	44.9	1.1	37.4	1.0	4.2	1.2	0.0	13.1	2.3	9.9	0.9	42.0	100.0	1,338
Education															
Primary/Secondary	58.2	47.0	1.1	39.4	1.3	3.6	1.6	0.0	11.2	1.7	8.1	1.4	41.8	100.0	1,314
Secondary-special	59.4	50.5	1.7	39.4	1.7	6.1	1.5	0.1	8.9	3.5	4.0	1.4	40.6	100.0	908
Higher	63.7	51.2	3.9	32.4	0.5	11.0	3.0	0.4	12.5	6.6	4.0	1.9	36.3	100.0	452
Ethnicity															
Kyrgyz	55.8	47.0	1.1	39.2	1.4	3.4	1.8	0.0	8.7	2.7	4.6	1.4	44.2	100.0	1,632
Russian	71.8	58.1	5.6	31.5	0.8	17.8	2.0	0.4	13.8	9.7	2.7	1.3	28.2	100.0	300
Uzbek	62.7	49.5	1.5	41.1	1.2	4.6	1.2	0.0	13.2	0.3	12.3	0.6	37.3	100.0	504
Other	63.2	48.7	1.4	33.5	2.0	8.3	3.0	0.5	14.5	3.8	6.5	4.2	36.8	100.0	240
No. of living children															
0	20.1	17.5	3.1	3.1	0.6	10.0	0.6	0.0	2.6	1.9	0.3	0.4	79.9	100.0	196
1	46.1	35.7	1.7	26.2	0.3	6.9	0.4	0.3	10.4	5.1	4.5	0.8	53.9	100.0	464
2	66.5	54.0	2.3	41.0	0.7	7.7	2.1	0.1	12.5	3.5	5.9	3.0	33.5	100.0	660
3	67.9	55.1	1.3	44.6	1.5	4.9	2.5	0.2	12.8	3.3	7.6	1.9	32.1	100.0	533
4+	65.5	55.6	1.3	46.8	2.4	2.8	2.3	0.0	9.9	2.0	7.2	0.7	34.5	100.0	823
Total	59.5	48.9	1.7	38.2	1.3	5.7	1.8	0.1	10.7	3.2	6.0	1.5	40.5	100.0	2,675

Figure 4.2
Current Use of Family Planning by
Background Characteristics

Note: Currently married women age 15-49

KRDHS 1997
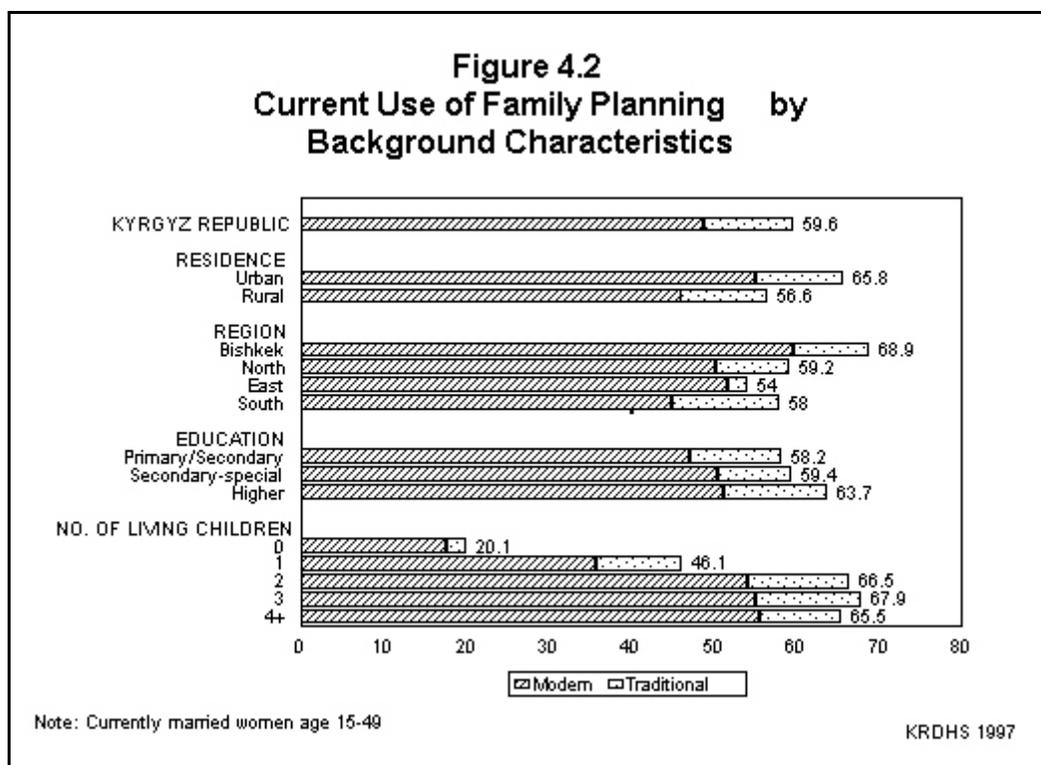
In order to gather data on pill brands, users of the pill were asked to show their pill packet to the interviewer, who then recorded the brand name of the pills. Overall, 80 percent of pill users were able to show their packets to the interviewer. Respondents who were unable to show their packet were asked to report the brand name of their pills. In total, brand information was obtained from 47 respondents. Table 4.6 presents the distribution of pill users by brand of pills. The table presents data for all pill users, regardless of marital status. Eleven brands of pills were reported as being used, with the most commonly used brand being Rigevidon (33 percent).

4.4 Number of Children at First Use of Contraception

To make some assessment of the motivations behind using family planning methods, women were asked how many living children they had at the time they first used a method of family planning. Women who use a method before ever having a child presumably want to delay their childbearing to some time in the future. Women who first employ a method after they have had one or two children may either want to delay the next child or limit their childbearing to one or two children. Women who use a method for the first time after having several children are more likely to be using family planning to stop childbearing, rather than simply spacing their childbearing. Table 4.7 presents the percent distribution of all ever-married women by the number of living children they had at the time they first used a method of family planning.

Table 4.6 Use of pill brands

Percent distribution of pill users by the brand of pills used, Kyrgyz Republic 1997

Pill brand	Total
Diane-35	1.2
Marvelon	4.5
Microgynon	12.1
Postinor	6.7
Rigevidon	33.1
Triziston	1.2
Triquilar	5.7
Triquilar ED Gy	3.3
Tri-regol	7.4
Mini-pills	1.2
Atsovin	15.2
Don't know	8.4
Total	100.0
Number	47

Table 4.7 Number of children at first use of contraception

Percent distribution of ever-married women by number of living children at the time of first use of contraception, and median number of children at first use, according to current age, Kyrgyz Republic 1997

| Current age | Never used contra- ception | Number of living children at time of first use of contraception | | | | | | Total | Number of women | Median number of children at first use[1] |
		0	1	2	3	4+	Missing			
15-19	57.8	21.5	20.8	0.0	0.0	0.0	0.0	100.0	102	0.0
20-24	35.7	9.9	38.9	12.5	2.3	0.3	0.4	100.0	521	1.6
25-29	18.0	9.0	38.8	27.1	5.4	1.4	0.3	100.0	506	1.8
30-34	11.8	4.2	27.2	29.1	17.9	9.9	0.0	100.0	614	2.4
35-39	11.5	2.5	19.2	27.3	18.2	21.1	0.2	100.0	574	2.8
40-44	13.7	2.6	19.7	19.4	14.5	30.2	0.0	100.0	404	3.1
45-49	16.8	2.0	15.9	17.6	12.1	35.5	0.2	100.0	302	3.5
Total	19.2	5.8	27.3	22.1	11.5	13.9	0.2	100.0	3,021	2.3

[1] Median number of children at first use of contraception among those who have ever used contraception

Use of family planning to delay the first pregnancy is uncommon in the Kyrgyz Republic (6 percent of women have done so). Older women (over the age of 39) had a median of three or more children before they first used contraception; younger women have a median of fewer than two children at first use of contraception.

Overall, 27 percent of ever-married women of reproductive age had one living child at the time they first used a method of contraception, and the likelihood of using a method after having just one child has been increasing over time. Up to 40 percent of women in their twenties first used a method of contraception after having one child.

4.5 Knowledge of the Fertile Period and of the Contraceptive Effect of Breastfeeding

Knowledge of reproductive physiology is an important prerequisite for effective use of traditional contraceptive methods. To successfully practice periodic sexual abstinence, a woman must know at which point during the ovulation cycle she is most likely to become pregnant. All women were asked whether they thought there was a time during their monthly cycle that they were more likely to become pregnant, and if so, to identify when that was. Table 4.8 presents the percent distribution of all women, women who are currently using any form of periodic abstinence, and women who are currently using the calendar rhythm method, by knowledge of the fertile period.

Table 4.8 Knowledge of fertile period

Percent distribution of all women and of women who are currently using periodic abstinence or the calendar rhythm method by knowledge of the fertile period during the ovulatory cycle, Kyrgyz Republic 1997

| Perceived fertile period | All women | Current users of: | |
		Periodic abstinence	Calendar rhythm
During her period	0.3	0.0	0.0
After period ended	12.0	5.1	3.9
Middle of the cycle	19.0	83.8	84.8
Before period begins	1.0	3.8	3.9
At any time	19.1	3.1	3.2
Other	0.1	0.0	0.0
Don't know	48.5	4.2	4.2
Total	100.0	100.0	100.0
Number	3,848	86	84

Note: Two respondents reported using the symptothermal method.

50

One out of five women properly identified the middle of the cycle as the most likely time to become pregnant. Most respondents said either that they did not know which time is more likely than another (49 percent), or that no time is more likely than another (19 percent). On the other hand, most women who are using either periodic abstinence or the calendar rhythm method know about the varying likelihood of becoming pregnant. Eighty-four percent of women who are using periodic abstinence and 85 percent of women who are using the calendar method could properly identify the time during which they are most fertile.

Exclusive and frequent breastfeeding can prolong the period of time following a birth during which a woman is amenorrheic (not menstruating) and anovulatory (not ovulating). It has also been shown that even after the resumption of menstruation the probability of pregnancy is lower among women who continue to breastfeed than among women who have stopped (Hobcraft and Guz, 1991; Potts et al., 1985).

Women were asked what effect, if any, breastfeeding has on the risk of pregnancy. Women were also asked whether they have ever relied on breastfeeding as a method of contraception and whether they are currently doing so. These data are shown in Table 4.9 for currently married women.

Overall, about one in three currently married women (36 percent) report that breastfeeding reduces the risk of becoming pregnant. This level of perception is generally maintained across most background characteristics. The most notable deviation is that women of Russian ethnicity are less inclined to believe that breastfeeding has any contraceptive effectiveness (27 percent).

Twenty-nine percent of currently married women have used breastfeeding as a means of contraception at some time in their lives, and 14 percent of women report they are currently doing so. Women of Kyrgyz and Uzbek ethnicity are the most likely to have used breastfeeding for family planning purposes (32 and 30 percent, respectively) and are also the most likely to be current users (16 and 17 percent, respectively).

Table 4.9 also presents the proportion of currently married women who meet the lactational amenorrheic method (LAM) criteria. In order to meet these criteria, a woman must be fully breastfeeding a child who is less than six months old, and she must also be amenorrheic. Two percent of women meet the LAM criteria.

4.6 Source of Family Planning Methods

All women currently using a modern method were asked where they most recently obtained their method.[2] Table 4.10 shows the percent distribution of current users of modern contraceptives by the source from which they most recently obtained their method.

The vast majority of women obtained their contraceptives through the public sector (97 percent). Thirty-five percent of users obtained their method from a hospital, and 36 percent from a family planning clinic (women counseling centers). The source of supply is related to the method used. For example, most women using IUDs obtain them at hospitals (39 percent) or family planning clinics (42 percent). Government pharmacies supply 46 percent of pill users and 75 percent of condom users. Pill users also go to family planning clinics to obtain their pills (33 percent). Figure 4.3 summarizes the distribution of current users of modern methods by source of method.

---

[2] Data collection included recording of the name of the source so that team supervisors and editors could verify the type of source.

Table 4.9 Perceived contraceptive effect of breastfeeding

Percent distribution of currently married women by perceived risk of pregnancy associated with breastfeeding, percentage who previously relied or who currently rely on breastfeeding to avoid pregnancy, and percentage who meet lactational amenorrheic method (LAM) criteria, according to selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Perceived risk of pregnancy associated with breastfeeding						Reliance on breastfeeding to avoid pregnancy			
	Un-changed	In-creased	De-creased	Depends	Don't know/ Missing	Total	Previ-ously	Cur-rently	Meet LAM criteria[1]	Number of women
Age										
15-19	58.6	14.2	17.5	9.4	0.3	100.0	10.5	8.8	10.2	91
20-24	44.0	14.7	35.5	4.6	1.2	100.0	25.8	16.0	6.2	460
25-29	42.6	13.1	36.7	6.9	0.6	100.0	31.2	12.8	2.6	458
30-34	37.0	20.2	36.4	6.3	0.2	100.0	29.6	15.7	1.8	557
35-39	37.0	19.1	39.1	4.8	0.0	100.0	30.0	15.2	0.7	511
40-44	44.5	16.8	32.2	6.5	0.0	100.0	30.3	14.5	0.0	342
45-49	39.0	17.6	35.2	8.1	0.0	100.0	28.9	10.5	0.0	256
Residence										
Urban	45.0	15.3	34.4	5.1	0.2	100.0	23.6	9.9	2.5	856
Rural	39.2	17.7	36.0	6.6	0.4	100.0	31.1	16.3	2.3	1,819
Region										
Bishkek City	54.4	8.0	32.8	4.7	0.2	100.0	22.1	6.2	1.5	349
North	47.0	6.8	40.3	5.1	0.7	100.0	24.4	12.6	3.2	836
East	50.5	8.6	36.8	3.8	0.2	100.0	28.2	13.8	1.5	152
South	32.8	26.5	33.1	7.4	0.2	100.0	33.1	17.5	2.2	1,338
Education										
Primary/Secondary	38.2	20.1	34.6	6.6	0.6	100.0	30.6	15.5	2.3	1,314
Secondary-special	43.2	13.6	37.5	5.5	0.3	100.0	27.6	14.4	1.8	908
Higher	45.2	14.6	34.0	6.2	0.0	100.0	25.2	10.6	3.7	452
Ethnicity										
Kyrgyz	38.4	16.7	37.3	7.1	0.5	100.0	32.2	15.9	2.9	1,632
Russian	59.9	8.7	27.2	4.2	0.0	100.0	15.0	4.3	1.0	300
Uzbek	38.1	24.0	32.4	5.5	0.0	100.0	30.3	17.4	1.9	504
Other	42.0	14.0	40.2	3.4	0.5	100.0	18.7	9.2	1.8	240
Total	41.1	16.9	35.5	6.1	0.4	100.0	28.7	14.3	2.4	2,675

[1] Currently fully breastfeeding, child is less than 6 months old and mother is postpartum amenorrheic

All current users of modern methods were asked whether they know a source for family planning other than the source from which they most recently obtained their method. Women who know an alternative source were asked to explain the main reason they went to their most recent source instead of the alternative source. Results are presented in Table 4.11 by background characteristics of respondents.

Seventy percent of women who were using modern methods at the time of the survey reported knowing of more than one place to obtain their method. Among those who knew of an alternative place, half chose their current source of supply because it was closer to home. Other reasons for choosing the place they did included the quality of the staff and the fact that they went to that source for other services as well.

Table 4.10 Source of supply for modern contraceptive methods

Percent distribution of current users of modern contraceptive methods by most recent source of supply, according to specific methods, Kyrgyz Republic 1997

	Modern method						All modern methods
Source of supply	Pill	IUD	Inject-ables	Con-dom	Female sterili-zation	Other	
Public	90.1	98.8	(99.2)	85.5	100.0	40.7	96.9
Hospital	7.1	38.6	(15.4)	2.9	98.4	0.0	35.0
Polyclinic	2.9	14.4	(39.4)	2.4	1.1	0.0	12.7
Women counseling center	33.3	41.7	(44.4)	4.7	0.5	20.4	35.6
Public pharmacy	46.1	3.9	(0.0)	74.8	0.0	20.4	13.3
Community health worker	0.6	0.2	(0.0)	0.7	0.0	0.0	0.2
Other public	0.0	0.1	(0.0)	0.0	0.0	0.0	0.0
Private medical	0.0	0.2	(0.8)	3.9	0.0	0.0	0.6
Private hosp, clinic	0.0	0.0	(0.8)	0.0	0.0	0.0	0.0
Private pharmacy	0.0	0.0	(0.0)	3.5	0.0	0.0	0.4
Private doctor	0.0	0.1	(0.0)	0.0	0.0	0.0	0.1
Private mobile clinic	0.0	0.1	(0.0)	0.0	0.0	0.0	0.1
Other private	0.0	0.0	(0.0)	0.4	0.0	0.0	0.0
Other source	7.0	0.0	(0.0)	9.7	0.0	20.4	1.4
Shop	1.2	0.0	(0.0)	4.2	0.0	0.0	0.5
Friends, relatives	2.5	0.0	(0.0)	4.5	0.0	0.0	0.6
Other	3.3	0.0	(0.0)	1.0	0.0	20.4	0.3
Missing	3.0	0.9	(0.0)	0.9	0.0	38.9	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	47	1,063	36	156	53	3	1,358

Note: Total includes four (unweighted) women using other modern methods. Figures in parentheses are based on 25-49 unweighted women.

Whether or not users of modern methods know of more than one place to obtain methods varies by background characteristics of respondents. Rural women are more likely than urban women to know of only one source of supply (34 and 24 percent, respectively). Women in the East and South Regions are more likely than women in Bishkek City and the North Region to know of only one source of supply (43 and 38 percent versus 19 and 23 percent, respectively).

4.7 Intention to Use Family Planning Among Nonusers

Intentions of women to use family planning methods in the future provide a basis for forecasting potential requirements of family planning services. The KRDHS asked nonusers of contraception whether they intend to use a method at some time in the future, and more specifically, whether they intend to do so within the next 12 months. Table 4.12 presents the results for currently married women according to their past experience with contraception and by the number of living children they have.

Overall, 66 percent of currently married nonusers intend to use a method of family planning at some time in the future; 40 percent intend to use within the next 12 months, 22 percent at some more distant time in the future, and 4 percent are unsure as to when they would use a method. The majority of nonusers who say they intend to use a method at some time in the future are women who have used a method at some time in the past.

Figure 4.3
Distribution of Current Users of Contraception
by Source of Supply

Public family planning clinic 36%

Public pharmacy 13%

Other 3%

Public polyclinic 13%

Hospital 35%
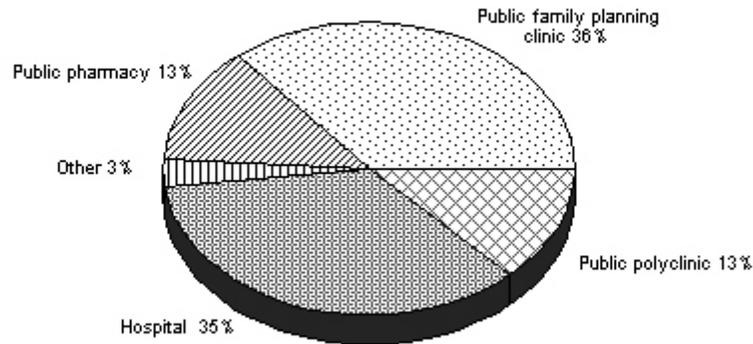
KRDHS 1997

Not surprisingly, women who intend to use a method later in the future (rather than sooner) tend to be women with no children. Most nonusers with children who intend to use a method say they intend to do so within the next 12 months. There still remain 29 percent of all currently married nonusers of contraception who do not intend to use a method of family planning at any time in the future. The women least likely to intend to use family planning are those who already have four or more children; 43 percent of nonusers with four or more children say they do not intend to use contraception.

The KRDHS results (data not shown) reveal that 31 percent of all nonusers of contraception[3] visited a health facility at some time in the 12 months prior to the survey but were not spoken to about family planning. This represents a significant lost opportunity on the part of the health community to impart knowledge about family planning to the population. In addition, 56 percent of nonusers did not visit a health facility within the 12 months prior to the survey; this translates to 86 percent of all nonusers having had no contact with a health professional regarding family planning in the previous 12 months.

4.8   Reasons for Nonuse of Contraception

The KRDHS asked all nonusers who do not intend to use a method of family planning in the future their reason for not intending to use. The results are presented in Table 4.13 for all women, and for women age 30-49. Ninety-four percent of women who are not currently using and who do not intend to use are over the age of 30 and the most common reasons given for not intending to use are related to perceived low risk of conception. Thirty-three percent of women reported themselves to be menopausal, and 30 percent reported themselves to be subfecund or infecund. Few women reported themselves to be opposed to family planning (5 percent).

---

[3] These data, which are not presented, refer to all nonusers regardless of marital status.

54

Table 4.11 Reasons for using current source of supply for contraceptive methods

Percent distribution of current users of modern contraceptive methods by main reason for using most recent source of supply, according to selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Knows no other source	Closer to home	Closer to work	Transport available	Staff competent/ friendly	Cleaner facility	Offers more privacy	Shorter waiting time	Long hours of operation	Use other services there	Lower cost, cheaper	Wanted anony- mity	Other	Don't know	Total	Number of users
Residence																
Urban	23.7	34.8	5.8	3.5	14.5	1.6	3.1	1.0	1.7	5.4	2.0	0.2	1.2	1.6	100.0	496
Rural	34.3	33.6	1.9	3.7	8.9	0.8	0.9	1.1	3.2	5.8	2.6	0.1	2.1	1.0	100.0	862
Region																
Bishkek City	19.4	28.3	6.5	5.1	24.3	2.7	4.6	0.3	1.9	3.2	0.8	0.5	1.1	1.3	100.0	215
North	22.7	45.5	3.2	7.0	11.2	0.2	1.1	0.0	1.7	1.6	1.3	0.0	2.3	2.1	100.0	448
East	42.8	18.8	4.5	1.7	15.8	0.0	4.4	0.0	1.4	8.4	1.0	0.7	0.4	0.0	100.0	81
South	38.3	29.6	2.1	1.0	5.5	1.4	0.8	2.2	3.7	9.1	3.8	0.0	1.9	0.6	100.0	615
Education																
Primary/Secondary	37.2	32.5	1.6	3.6	9.4	1.0	1.2	1.1	2.9	6.3	1.9	0.0	0.5	0.8	100.0	647
Secondary-special	26.1	37.4	5.9	2.9	10.3	0.2	1.7	1.1	2.3	4.7	2.7	0.1	3.4	1.4	100.0	472
Higher	20.7	31.5	3.1	5.3	16.6	3.2	3.1	0.6	2.6	5.8	2.9	0.5	2.2	1.8	100.0	239
Ethnicity																
Kyrgyz	33.0	32.5	3.2	3.0	11.1	1.1	1.7	1.3	3.0	5.6	1.7	0.1	2.0	0.7	100.0	790
Russian	15.6	39.8	6.7	6.7	16.4	1.9	3.1	0.0	2.1	2.8	0.9	0.3	1.2	2.6	100.0	187
Uzbek	38.9	28.9	1.9	2.0	7.3	0.6	0.2	1.2	2.6	9.7	3.8	0.0	1.7	1.1	100.0	258
Other	18.3	45.6	2.1	7.1	9.6	0.9	2.8	0.5	1.4	1.9	5.4	0.5	1.7	2.3	100.0	123
Reason for using																
To space	24.7	37.4	3.6	3.6	12.8	1.1	1.9	1.8	3.4	4.7	1.9	0.1	2.0	1.0	100.0	589
To limit	34.8	31.4	3.1	3.7	9.5	1.1	1.6	0.5	2.1	6.4	2.7	0.1	1.6	1.3	100.0	769
Total	30.4	34.0	3.3	3.7	11.0	1.1	1.7	1.0	2.6	5.6	2.3	0.1	1.8	1.2	100.0	1,358

55

Table 4.12 Future use of contraception

Percent distribution of currently married who are not using a contraceptive method by past experience with contra-
ception and intention to use in the future, according to number of living children, Kyrgyz Republic 1997

Past experience with contraception and future intention	Number of living children[1]					
	0	1	2	3	4+	Total
Never used contraception						
Intend to use in next 12 months	4.2	29.5	16.8	10.9	6.1	14.1
Intend to use later	32.7	15.7	9.6	4.7	1.9	10.1
Unsure as to timing	9.6	4.9	0.4	0.8	0.1	2.2
Unsure as to intention	12.1	6.0	1.8	2.0	0.0	3.2
Do not intend to use	22.5	9.1	7.6	11.7	12.3	11.5
Missing	0.5	0.5	0.4	0.0	0.0	0.3
Previously used contraception						
Intend to use in next 12 months	3.2	10.2	33.0	34.7	34.7	26.1
Intend to use later	10.0	12.9	13.0	11.0	11.6	11.9
Unsure as to timing	1.3	1.9	2.8	1.9	0.1	1.5
Unsure as to intention	0.5	0.6	1.4	4.9	1.9	1.9
Do not intend to use	2.7	8.5	13.2	17.4	31.1	17.1
Missing	0.5	0.3	0.0	0.0	0.2	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
All currently married nonusers						
Intend to use in next 12 months	7.4	39.6	49.8	45.6	40.8	40.2
Intend to use later	42.7	28.6	22.6	15.7	13.6	22.0
Unsure as to timing	10.9	6.8	3.2	2.7	0.2	3.8
Unsure as to intention	12.6	6.6	3.2	6.9	1.9	5.1
Do not intend to use	25.2	17.6	20.8	29.1	43.4	28.5
Never had sex	1.1	0.8	0.4	0.0	0.2	0.4
Missing						
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	107	224	249	190	311	1,082

[1] Includes current pregnancy

Table 4.13 Reasons for not using contraception

Percent distribution of all women and women age 30-
49 who are not using a contraceptive method and who
do not intend to use in the future, by main reason for
not intending to use, according to age, Kyrgyz
Republic 1997

Reason for not using contraception	Women age 30-49	All women
Not married	1.7	1.6
Infrequent sex	13.8	13.0
Menopausal, hysterectomy	33.9	32.5
Subfecund, infecund	30.0	29.7
Wants more children	8.3	9.8
Respondent opposed	5.1	5.4
Husband opposed	0.3	0.3
Others opposed	0.5	0.5
Religious prohibit	0.4	0.4
Health concerns	2.2	2.6
Fear side effects	1.1	1.0
Inconvenient to use	0.0	0.5
Other	1.7	1.9
Don't know	1.0	0.9
Total	100.0	100.0
Number of women	290	309

4.9   Preferred Method of Contraception for Future Use

Nonusers of contraception who intend to use at some time in the future were asked which method they would prefer to use. Data are presented for currently married women in Table 4.14 according to whether the nonusers intend to use within the next 12 months or later.

Overall, about three-quarters (73 percent) of nonusers who intend to use report the IUD to be the method they would use. The pill is the second most commonly reported method of choice (6 percent). Among women who intend to use after 12 months, condoms and withdrawal are the most commonly reported methods after the IUD (mentioned by 8 and 7 percent, respectively). Other methods are mentioned by less than 5 percent of women.

Table 4.14 Preferred method of contraception for future use

Percent distribution of currently married women who are not using a contra-
ceptive method but who intend to use in the future by preferred method,
according to whether they intend to use in the next 12 months or later, Kyrgyz
Republic 1997

| Preferred method of contraception | Timing of intended use | | | |
	In next 12 months	After 12 months	Unsure as to timing	Total
Pill	7.3	4.9	(2.7)	6.2
IUD	76.2	65.6	(75.6)	72.6
Injectables	4.9	5.1	(3.4)	4.9
Condom	2.1	7.6	(4.3)	4.1
Female sterilization	0.3	0.9	(0.0)	0.5
Periodic abstinence	1.3	1.1	(1.4)	1.3
Withdrawal	2.0	7.2	(0.0)	3.7
Folk method	2.8	4.4	(5.9)	3.5
Douche	0.8	0.7	(0.0)	0.7
Missing	2.3	2.4	(6.6)	2.6
Total	100.0	100.0	100.0	100.0
Number of women	435	238	41	714

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

4.10   Exposure to Family Planning Messages in the Electronic Media

The mass media provides an opportunity to communicate family planning information to a broad spectrum of the population. Forty-one percent of households in the Kyrgyz Republic own a radio and 85 percent own a television; rural and urban households have similar levels of ownership of these two items (see Chapter 2). All KRDHS respondents were asked whether they had heard a family planning message on the radio or television in the last few months prior to the interview. Results are presented in Table 4.15 by background characteristics of respondents.

Overall, about one in two women (54 percent) has recently heard a family planning message on the radio and/or television. Television is the more common source for having heard a message; 51 percent of women have seen a television message and 23 percent have heard a radio message. Urban dwellers are more likely than rural dwellers to have seen a television message (60 and 46 percent, respectively), even though urban and rural households are about equally likely to own a television (88 and 83 percent, respectively), and urban and rural dwellers are about equally likely to report watching television at least once a week (93 and 88 percent, respectively). Nearly everyone who hears a radio message about family planning has also seen a television message.

As many as 71 percent of women in Bishkek City report having recently seen or heard a family planning message on radio or television; only 45 percent of women in the East Region have seen or heard such a message. While television messages can be aimed at viewers of all educational levels, the likelihood that a respondent has in fact recently seen a television message or heard a radio message increases with increasing education. Forty-five percent of women with primary/secondary education have seen or heard a message, while 72 percent of women with higher education have done so. Russian women are the most likely to have seen or heard a family planning message (80 percent).

Table 4.15 Exposure to family planning messages on radio and television

Percent distribution of women by whether they have heard a radio and/or television message about family planning in the last few months prior to the interview, according to selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Heard on neither	Radio only	Tele-vision only	Heard on both radio and TV	Total	Number of women
Residence						
Urban	37.5	2.1	40.4	20.0	100.0	1,290
Rural	50.1	3.5	26.0	20.4	100.0	2,558
Region						
Bishkek City	29.1	1.5	46.1	23.3	100.0	518
North	41.7	2.9	25.6	29.8	100.0	1,188
East	55.0	2.9	28.6	13.5	100.0	215
South	51.9	3.6	30.2	14.3	100.0	1,926
Education						
Primary/Secondary	54.8	3.2	26.2	15.9	100.0	2,053
Secondary-special	39.8	2.8	33.0	24.4	100.0	1,151
Higher	28.3	3.0	41.9	26.8	100.0	643
Ethnicity						
Kyrgyz	53.2	3.9	26.3	16.6	100.0	2,380
Russian	20.4	1.2	45.0	33.4	100.0	412
Uzbek	42.4	2.4	33.6	21.6	100.0	691
Other	33.1	0.9	39.1	26.9	100.0	364
Total	45.9	3.0	30.8	20.3	100.0	3,848

4.11   Acceptability of Use of Electronic Media to Disseminate Family Planning Messages

The KRDHS asked all respondents whether they find it acceptable or not acceptable for family planning messages to be broadcast over the radio or television. Results are presented in Table 4.16 by background characteristics of respondents.

The vast majority of women (91 percent) find it acceptable for family planning messages to be broadcast over the radio and television. The youngest women (age 15-19) are somewhat less likely than older women to say they find broadcast messages acceptable, 9 percent believe such messages are not acceptable, and 8 percent are unsure. Urban and rural women have nearly identical levels of approval; attitudinal variations across regions and ethnic groups are not great. Overall, 6 percent of women feel that broadcasting of family planning messages is not acceptable.

4.12   Exposure to Family Planning Messages in Print Media

The high level of literacy in the Kyrgyz Republic makes the print media a viable mechanism for communicating family planning information. Sixty-nine percent of all respondents reported that they read a newspaper at least once a week. The KRDHS asked women whether they saw a message about family planning in a newspaper or magazine, a poster, or a leaflet or brochure in the last few months preceding the interview. Results are presented in Table 4.18 by background characteristics of respondents.

Table 4.16 Acceptability of media messages on family planning

Percent distribution of women by acceptability of messages about family planning on the
radio and television, by selected background characteristics, Kyrgyz Republic 1997

| Background characteristic | Acceptability of family planning messages on radio or television | | | | Number of women |
	Accept-able	Not accept-able	Unsure	Total	
Age					
15-19	83.0	8.9	7.9	100.0	743
20-24	95.1	2.7	2.2	100.0	649
25-29	93.2	5.4	1.4	100.0	530
30-34	93.3	4.3	2.4	100.0	630
35-39	92.1	5.1	2.8	100.0	579
40-44	92.0	6.5	1.5	100.0	410
45-49	86.6	10.8	2.6	100.0	307
Residence					
Urban	90.8	5.9	3.3	100.0	1,290
Rural	90.7	6.0	3.3	100.0	2,558
Region					
Bishkek City	93.1	3.9	3.0	100.0	518
North	87.7	7.8	4.4	100.0	1,188
East	84.2	6.9	8.9	100.0	215
South	92.8	5.2	2.0	100.0	1,926
Education					
Primary/Secondary	88.2	6.7	5.1	100.0	2,053
Secondary-special	94.1	4.8	1.1	100.0	1,151
Higher	93.1	5.5	1.4	100.0	643
Ethnicity					
Kyrgyz	90.8	5.7	3.5	100.0	2,380
Russian	90.5	7.0	2.5	100.0	412
Uzbek	92.3	4.8	2.9	100.0	691
Other	88.1	8.5	3.4	100.0	364
Total	90.8	5.9	3.3	100.0	3,848

About half (53 percent) of all respondents have recently seen information about family planning in the print media. Sixty-six percent of urban women and 46 percent of rural women have recently seen a family planning message in print. Three-quarters of the women in Bishkek City (74 percent) have recently read a printed family planning message, while 65, 40, and 41 percent of women living in the North, East and South Region, respectively, have read such a message.

The likelihood that a respondent has recently seen or read a message increases steadily with increasing education. Thirty-eight percent of respondents with primary or secondary education have recently read a message, while 65 and 79 percent, respectively, of women with secondary-special and higher education have seen such a message. Women of Russian ethnicity are more likely than women of Kyrgyz ethnicity to have recently seen printed information on family planning (82 and 53 percent, respectively).

Newspapers and magazines are the most commonly seen printed source of family planning information (seen by 48 percent of respondents), although respondents also receive messages from leaflets and brochures (26 percent) and posters (19 percent). Each of the print media presented in the table display the same patterns by background characteristics of respondents as the overall patterns for all print material combined.

Table 4.17 Exposure to family planning messages in print media

Percentage of women who received a message about family planning through the print media in the last few months prior to the interview, according to selected background characteristics, Kyrgyz Republic 1997

| Background characteristic | Type of print media containing family planning message | | | | Number of women |
	No source	Newspaper/ magazine	Poster	Leaflet/ brochure	
Residence					
Urban	33.8	62.7	24.7	31.6	1,290
Rural	54.1	40.6	16.7	23.4	2,558
Region					
Bishkek City	25.8	70.4	29.0	30.9	518
North	35.1	62.4	26.5	37.1	1,188
East	60.2	33.9	8.0	9.5	215
South	59.2	34.6	13.7	19.9	1,926
Education					
Primary/Secondary	62.5	33.3	12.1	15.0	2,053
Secondary-special	34.9	59.5	25.8	36.9	1,151
Higher	20.8	74.3	31.3	42.3	643
Ethnicity					
Kyrgyz	47.5	47.5	16.9	24.6	2,380
Russian	18.3	77.2	32.3	43.3	412
Uzbek	69.9	24.7	12.1	15.5	691
Other	36.1	62.3	34.6	36.5	364
Total	47.3	48.0	19.4	26.1	3,848

4.13   Attitudes of Couples Toward Family Planning

Married women were asked how often they had discussed contraception with their husband or partner in the previous year. Data are presented by age in Table 4.18 for currently married women who know of at least one contraceptive method.

Overall, nearly one-third of married women (31 percent) have not discussed family planning with their husbands at all in the previous year, 39 percent have discussed the topic once or twice, and 30 percent have discussed the topic more often. Younger women are more likely than older women to have recently discussed family planning with their husbands; four out of five women in their twenties have discussed family planning with their husbands. Women over the age of 30 are increasingly less likely to have recently discussed family planning with their husbands, steadily increasing from 23 percent of 30-34 year-olds to 58 percent of 45-49 year-olds.

Currently married women were asked whether they thought their husband approved or disapproved of couples using family planning to avoid pregnancy. Table 4.19 presents the results of the wives' perceptions of their husbands' attitudes, by background characteristics of respondents.

Perhaps the most interesting finding in Table 4.19 is the fact that women report a lower approval level for their husbands than for themselves across all background characteristics. Overall, 97 percent of women report that they approve of contraception, and 85 percent report that their husbands approve; this translates to 84 percent of all married couples in which both the husband and wife approve of contraception. Only 1 percent of women report that both they and their husbands disapprove of family planning.

Table 4.18 Discussion of family planning by couples

Percent distribution of currently married women who know a contraceptive method by the number of times family planning was discussed with husband in the year preceding the survey, according to current age, Kyrgyz Republic 1997

Background characteristic	Number of times family planning discussed			Total	Number of women
	Never	Once or twice	More often		
15-19	41.3	38.3	20.4	100.0	90
20-24	23.5	41.5	35.0	100.0	460
25-29	20.3	38.7	41.0	100.0	452
30-34	23.2	42.9	33.9	100.0	554
35-39	31.2	41.1	27.7	100.0	502
40-44	44.2	34.6	21.2	100.0	321
45-49	58.1	31.9	10.0	100.0	242
Total	30.7	39.4	29.9	100.0	2,621

Table 4.19 Wives' perceptions of their husbands' attitudes toward family planning

Percent distribution of currently married women who know of a contraceptive method by wife's attitude toward family planning and wife's perception of her husband's attitude toward family planning (FP), according to selected background characteristics, Kyrgyz Republic 1997

| Background characteristic | Both approve | Wife approves of couples using FP | | Both disap-prove | Wife disapproves of couples using FP | | Wife unsure | Missing | Total | Husband approves[1] | Wife approves | Number of women |
		Hus-band disap-proves	Hus-band's attitude unknown		Hus-band ap-proves	Hus-band's attitude unknown						
Age												
15-19	53.4	26.1	15.6	1.2	0.0	1.2	2.4	0.0	100.0	53.4	95.2	90
20-24	83.1	9.2	5.0	0.9	0.7	0.1	1.0	0.0	100.0	84.3	97.3	460
25-29	84.7	9.5	2.5	0.9	0.6	0.4	0.9	0.5	100.0	86.0	96.7	452
30-34	89.5	6.0	3.3	0.6	0.2	0.0	0.5	0.0	100.0	89.9	98.8	554
35-39	86.9	5.1	5.3	1.0	0.3	0.3	1.1	0.0	100.0	87.6	97.3	502
40-44	83.2	4.9	7.0	0.6	0.5	2.1	1.7	0.0	100.0	84.1	95.1	321
45-49	74.3	9.6	11.9	1.2	0.1	0.4	2.0	0.6	100.0	76.0	95.8	242
Residence												
Urban	86.8	6.0	4.9	0.7	0.1	0.7	0.8	0.0	100.0	87.4	97.6	834
Rural	82.2	8.8	5.8	0.9	0.5	0.4	1.2	0.2	100.0	83.3	96.8	1,787
Region												
Bishkek City	87.5	4.5	5.7	0.2	0.3	0.5	1.2	0.0	100.0	88.2	97.7	335
North	80.4	10.8	4.9	1.4	0.4	0.4	1.3	0.3	100.0	81.7	96.2	819
East	78.8	5.8	6.8	1.1	1.7	0.4	5.4	0.0	100.0	83.3	91.4	149
South	85.2	7.2	5.7	0.6	0.2	0.5	0.5	0.1	100.0	85.6	98.0	1,318
Education												
Primary/Secondary	79.7	9.4	7.1	1.2	0.3	0.5	1.6	0.2	100.0	80.6	96.2	1,289
Secondary-special	86.2	6.9	4.5	0.5	0.5	0.6	0.8	0.1	100.0	87.2	97.5	893
Higher	90.1	5.6	2.9	0.6	0.6	0.0	0.3	0.0	100.0	90.7	98.6	439
Ethnicity												
Kyrgyz	82.5	8.4	5.6	1.1	0.5	0.4	1.5	0.0	100.0	83.6	96.5	1,599
Russian	89.9	5.2	3.3	0.0	0.0	0.8	0.7	0.0	100.0	90.6	98.5	294
Uzbek	85.1	6.8	6.6	0.0	0.3	0.6	0.3	0.3	100.0	85.5	98.5	498
Other	80.3	10.5	5.3	2.1	0.0	0.5	0.3	1.0	100.0	81.3	96.1	230
Total	83.6	7.9	5.5	0.8	0.4	0.5	1.1	0.1	100.0	84.6	97.0	2,621

[1] Includes cases in which the wife is unsure about her own attitude but knows her husband's

CHAPTER 5

INDUCED ABORTION

Jeremiah M. Sullivan, Talaibek S. Builashev and Guldana D. Duishenbieva

Induced abortion as a means of fertility control has a long history in the republics of the former Soviet Union. Induced abortion was first legalized in the Soviet Union in 1920 but was banned in 1936 as part of a pro-natalist policy emphasizing population growth. This decision was reversed in 1955 when abortion for nonmedical reasons was again legalized throughout the former Soviet Union.

The practice of induced abortion can adversely affect a woman's health, reduce her chances for further childbearing, and contributes to maternal and perinatal mortality. The Ministry of Health of the Kyrgyz Republic (MOH) has been concerned about the impact of abortion on women's health and, in particular, the impact of repeat abortion. In an effort to curtail this practice the MOH is committed to providing the population with a broad choice of modern, safe, and effective contraceptive methods.

International experience with the collection of abortion data in population surveys has been relatively unsuccessful in many populations because of respondent reluctance to report events that are associated with social stigmas. However, in the republics of the former Soviet Union and in many Eastern European countries, induced abortion is an accepted means of fertility control. In several of these countries household surveys have collected data on this topic with apparent success (NIN and MI, 1996; IOG and MI, 1997; RCPOMR and CDC, 1997). Accordingly, questions on abortion were pretested and included in the final questionnaires for the KRDHS.

Information about induced abortion was collected in the reproductive section of the Women's Questionnaire (Appendix E). The section began with a series of questions to determine the total number of live births, induced abortions, miscarriages and stillbirths that a respondent has had. When reporting the number of abortions, respondents were told to include pregnancies terminated by vacuum aspiration (i.e., mini-abortions)[1]. Next an event-by-event pregnancy history was collected. For each pregnancy, the type of outcome and year and month of termination were recorded.[2]

5.1   Pregnancy Outcomes

For the three-year period preceding the survey (i.e., from mid-1994 to mid-1997), Table 5.1 shows the percent distribution of pregnancies by outcome. In the Kyrgyz Republic, the majority of pregnancies, 63 percent, ended in a live birth and the remaining 37 percent terminated in fetal wastage (i.e., an induced abortion, miscarriage or stillbirth). Induced abortion was the most commonly reported type of fetal wastage, accounting for 27 percent of all pregnancy terminations.

---

[1] In the remainder of this report, the term abortion includes mini-abortions unless indicated otherwise.

[2] The pregnancy history was structured to ensure as complete reporting of abortions as possible, especially for the period immediately prior to the survey. Data were collected in reverse chronological order (i.e., information was first collected about the most recent pregnancy and then about the next-to-last, etc.). This procedure should result in more complete reporting of events for the years immediately prior to the survey than would a procedure that proceeds in chronological order. At the end of pregnancy history, interviewers were required to check the consistency between the aggregate data collected at the outset of the reproductive section and the number of events reported in the pregnancy history. Finally, interviewers were required to probe pregnancy intervals of four years or more to detect omitted events.

Table 5.1 Pregnancy outcomes by background characteristics

Percent distribution of pregnancies terminating in the three years preceding the survey, by type of outcome, according to selected background characteristics, Kyrgyz Republic 1997

Background characteristics	Pregnancy outcome				Total	Number of pregnancies
	Live birth	Induced abortion	Mis-carriage	Still-birth		
Residence						
Urban	47.6	42.2	9.1	1.0	100.0	557
Rural	69.5	20.8	9.0	0.7	100.0	1,306
Region						
Bishkek City	41.4	48.8	9.2	0.6	100.0	196
North	61.7	30.6	7.2	0.4	100.0	535
East	73.8	14.5	10.6	1.1	100.0	106
South	66.6	22.6	9.8	1.0	100.0	1,026
Education						
Primary/Secondary	68.8	21.1	9.1	1.0	100.0	893
Secondary-special	60.9	31.8	6.9	0.5	100.0	681
Higher	49.8	35.5	13.8	0.9	100.0	288
Ethnicity						
Kyrgyz	67.3	21.8	9.9	1.1	100.0	1,147
Russian	36.4	57.9	4.8	0.8	100.0	141
Uzbek	64.5	26.2	9.0	0.4	100.0	405
Other	52.1	41.0	6.9	0.0	100.0	170
Total	62.9	27.2	9.0	0.8	100.0	1,862

Table 5.1 also shows information on pregnancy terminations by background characteristics of respondents. In urban areas, pregnancies were twice as likely to end in abortion (42 percent) than in rural areas (21 percent). Substantial regional differences were also evident. The proportion of pregnancies ending in abortion was lowest in the East Region (15 percent), higher in the South and North Regions (23 and 31 percent, respectively) and highest in Bishkek (49 percent).

It is worth noting that the ranking of regions by pregnancies ending in abortion is inversely correlated with fertility levels. As shown in Table 3.2, the total fertility rate for the three years preceding the survey was highest in the East Region (4.3 children per woman), lower in the South and North Regions (3.9 and 3.1 children per woman, respectively) and lowest in Bishkek (1.7 children per women).

Education and ethnicity are also associated with pregnancy outcome. When progressing from primary/secondary educated women to secondary-special and higher educated women, the proportion of pregnancies terminating in abortion increases (21, 32 and 36 percent, respectively). A substantial differential in the proporation of pregnancies ending in abortion also exists between women of Kyrgyz and Uzbek ethnicity (22 and 26 percent, respectively) and women of Russian ethnicity (58 percent).

5.2   Lifetime Experience with Induced Abortion

Lifetime experience of women with abortion is shown in Table 5.2. It should be noted that the statistics on the proportion of women who have ever had an abortion are based on all women 15-49 irrespective of their exposure to the risk of pregnancy.

Table 5.2 Lifetime experience with induced abortion

Percentage of women who have had at least one induced abortion and, among those women, the percent distribution of the number of induced abortions and the mean number of induced abortions, according to selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Percentage of women who have had an induced abortion	Among women who have had an induced abortion, the number of induced abortions				Total	Mean	Number of women
		1	2-3	4-5	6+			
Age								
<20	0.5	*	*	*	*	100.0	*	743
20-25	12.0	70.9	25.3	2.5	1.3	100.0	1.5	766
25-34	36.4	50.1	42.1	5.7	2.1	100.0	1.9	1,043
35+	53.1	30.1	49.5	12.7	7.7	100.0	2.7	1,296
No. of live births								
None	1.8	70.6	26.4	3.0	0.0	100.0	1.4	1,074
1	26.4	47.3	41.3	9.1	2.3	100.0	2.1	571
2-3	46.8	38.4	43.2	10.4	8.1	100.0	2.6	1,321
4-5	44.6	38.8	49.2	9.4	2.6	100.0	2.1	658
6+	36.9	37.1	54.8	6.3	1.9	100.0	2.0	224
Residence								
Urban	40.7	32.0	49.3	11.2	7.6	100.0	2.6	1,290
Rural	24.9	46.8	41.5	8.2	3.5	100.0	2.1	2,558
Region								
Bishkek City	46.9	29.8	50.8	13.4	6.0	100.0	2.6	518
North	36.9	37.3	45.1	11.4	6.2	100.0	2.5	1,188
East	19.2	53.3	38.6	7.4	0.7	100.0	1.8	215
South	22.9	47.3	42.2	5.8	4.6	100.0	2.1	1,926
Education								
Primary/Secondary	22.0	44.5	42.5	9.0	4.1	100.0	2.2	2,053
Secondary-special	40.7	37.6	46.1	10.0	6.3	100.0	2.5	1,151
Higher	37.6	36.8	47.6	9.7	5.9	100.0	2.3	643
Ethnicity								
Kyrgyz	25.3	44.9	43.9	8.5	2.7	100.0	2.0	2,380
Russian	55.2	23.0	47.1	15.0	14.9	100.0	3.4	412
Uzbek	27.4	49.8	43.7	4.8	1.6	100.0	1.9	691
Other	39.7	34.0	48.0	11.8	6.2	100.0	2.6	364
Marital status								
Never married	0.4	*	*	*	*	100.0	*	827
Married, living together	39.3	40.1	45.5	8.9	5.6	100.0	2.3	2,675
Ever married	31.6	39.6	41.0	16.4	3.1	100.0	2.3	346
Total	30.2	40.1	45.0	9.6	5.4	100.0	2.3	3,848

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Overall, 30 percent of women of reproductive age in the Kyrgyz Republic have had at least one abortion. As expected, the percentage who have had an abortion increases rapidly with age; from 12 percent of women 20-24 to 53 percent of women 35 and over. Differences are also large by urban/rural residence; experience with abortion is less among rural women (25 percent) than urban women (41 percent). Regional differences are even greater; experience with abortion is less than half as great among women in the East Region (19 percent) than among women in Bishkek (47 percent).

Table 5.2 also presents information on repeat use of induced abortion. Among women who have ever had an abortion, a majority (60 percent) have had more than one. Among women age 35+ who have had an abortion, 70 percent have had more than one. The mean number of abortions for women who have had one or more abortions is 2.3. Thus, among women who have used abortion to control their fertility, repeat use has been common.

5.3   Rates of Induced Abortion

In this section rates of induced abortion are shown for the three-year period preceding the KRDHS (i.e., the period from mid-1994 to mid-1997). Two types of rates are presented; age-specific rates and the total abortion rate (TAR). The age-specific rates, which are shown per 1,000 women, represent the probability that women of a given age will have an abortion during a period of one year. The TAR, which is expressed per woman, is a summary measure of the age-specific rates. The TAR is interpreted as the number abortions a woman would have in her lifetime if she experienced the currently observed age-specific rates during her childbearing years.

Table 5.3 Induced abortion rates

Age-specific induced abortion, total abortion, and general abortion rates for the three-year period prior to the survey, by urban-rural residence and ethnicity, Kyrgyz Republic 1997

Age of woman	Residence		Ethnicity				Total[1]
	Urban	Rural	Kyrgyz	Russian	Uzbek	Other	
15-19	8	5	2	(26)	0	(21)	6
20-24	92	41	42	(176)	(34)	(64)	57
25-29	120	53	62	(47)	(118)	(130)	77
30-34	83	79	68	(103)	(104)	(99)	81
35-39	78	48	47	(53)	(74)	(107)	58
40-44	30	18	20	(32)	(25)	(13)	22
45-49	6	12	9	(12)	(19)	(0)	10
TAR 15-49	2.09	1.28	1.25	2.25	1.86	2.17	1.55
TAR 15-44	2.06	1.22	1.21	2.19	1.77	2.17	1.50
GAR	70	41	41	76	58	74	51

TAR: Total abortion rate expressed per woman
GAR: General abortion rate (induced abortions divided by number of women 15-44) expressed per 1,000 women
Note: Rates in parentheses indicate that one or more of the component age-specific rates is based on fewer than 250 woman-years of exposure.

As shown in Table 5.3, at the national level, the age-specific rates of induced abortion increase in the first few age groups of women, reach a broad peak in the age groups 25-29 and 30-34 (77 and 81 per 1,000, respectively) and decline in the older age groups. The pattern is such that the age-specific rates of abortion are less than the fertility rates of women under age 35 but are greater than the fertility rates of older women (Figure 5.1).

The age-specific rates imply a lifetime TAR of 1.6 abortions per woman. This estimate can be compare with the estimates for Kazakhstan and Uzbekistan derived from nationl-level surveys recently conducted in those countries. The estimate for the Kyrgyz Republic is slightly less than the estimate for

Kazakhstan (1.8 abortions per woman, mid-1992 to mid-1995) but is substantially greater than the estimate for Uzbekistan (0.7 abortions per woman, mid-1993 to mid-1996) (NIN and MI, 1996; IOG and MI, 1997).

Figure 5.1
Age-Specific Rates of Fertility (ASFR)
and Induced Abortion (ASAR)
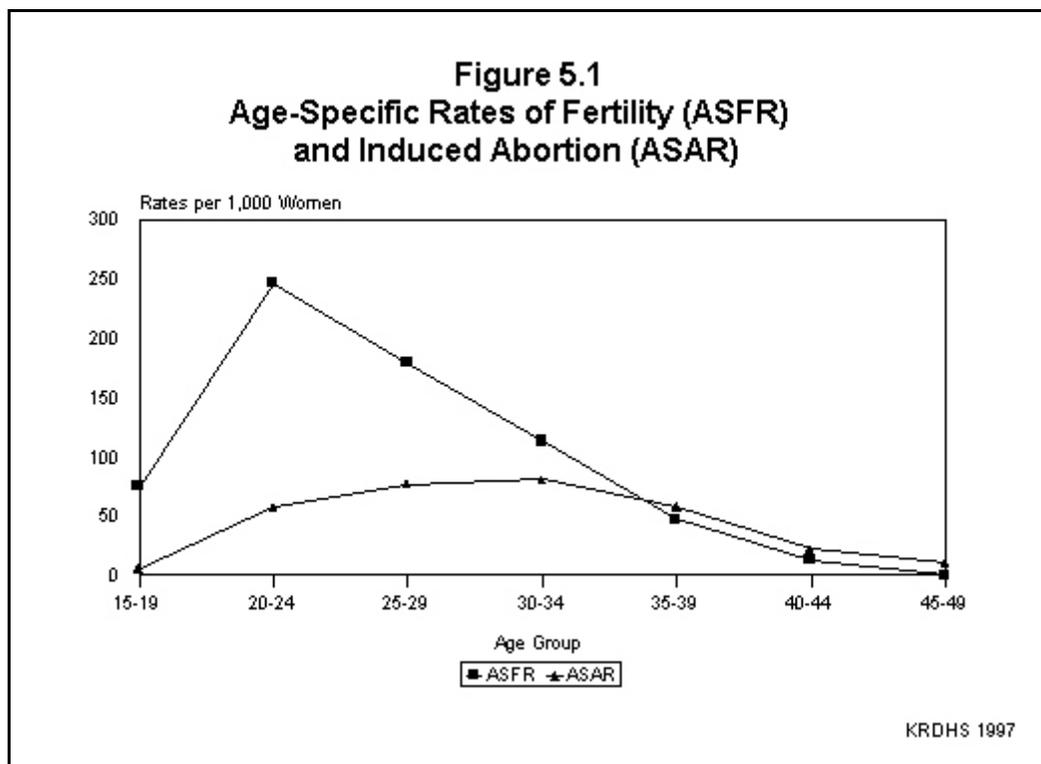
Table 5.3 also shows induced abortion rates by residence and ethnicity. At every age, the age-specific urban rates exceed the rural rates. Among women age 20-24 and 25-29, urban rates are more than twice as great as rural rates. Overall, the urban TAR (2.1 abortions per woman) exceeds the rural TAR (1.3 abortions per woman) by 62 percent (Figure 5.2).

The differentials by ethnicity are about the same as by residency. Russian women frequently have age-specific rates twice as great as Kyrgyz women. The TAR for Russian women (2.2 abortions per woman) exceeds the TAR for Kyrgyz women (1.3) by about 70 percent.

5.4   Trends in Induced Abortion

An indication of trends in induced abortion can be obtained by comparing values of the TAR for the three years preceding the survey with the mean number of abortions reported by women age 40-49. The former is a summary measure of current abortion rates while the latter represents the cumulative experience of older women (i.e., represents their experience over the last 25 years).

Table 5.4 indicates that, at the national level, the current TAR and the number of abortions reported by woman age 40-49 are the same (1.6 abortions per women) which implies that recourse to induced abortion has been stable over the last couple of decades.

However, while the abortion levels for the Republic as a whole appear to be stable, the data for some population subgroups indicate that the use of abortion has changed. For women residing in Bishkek and in the North Region the TAR (2.0 and 1.6 abortions per women, respectively) is well below the mean number

of abortions among women age 40-49 (2.4 and 2.1), suggesting a decline in the use of abortion in those areas. Similarly, for Russian women the TAR is well below the number of abortions reported by women age 40-49. However these declines in the use of abortion have been offset by inceases by other groups. For example, for women residing in the South Region, the TAR (1.5) exceeds the number of abortions reported by women age 40-49 (1.1).

Figure 5.2
Total Induced Abortion Rate by Background Characteristics
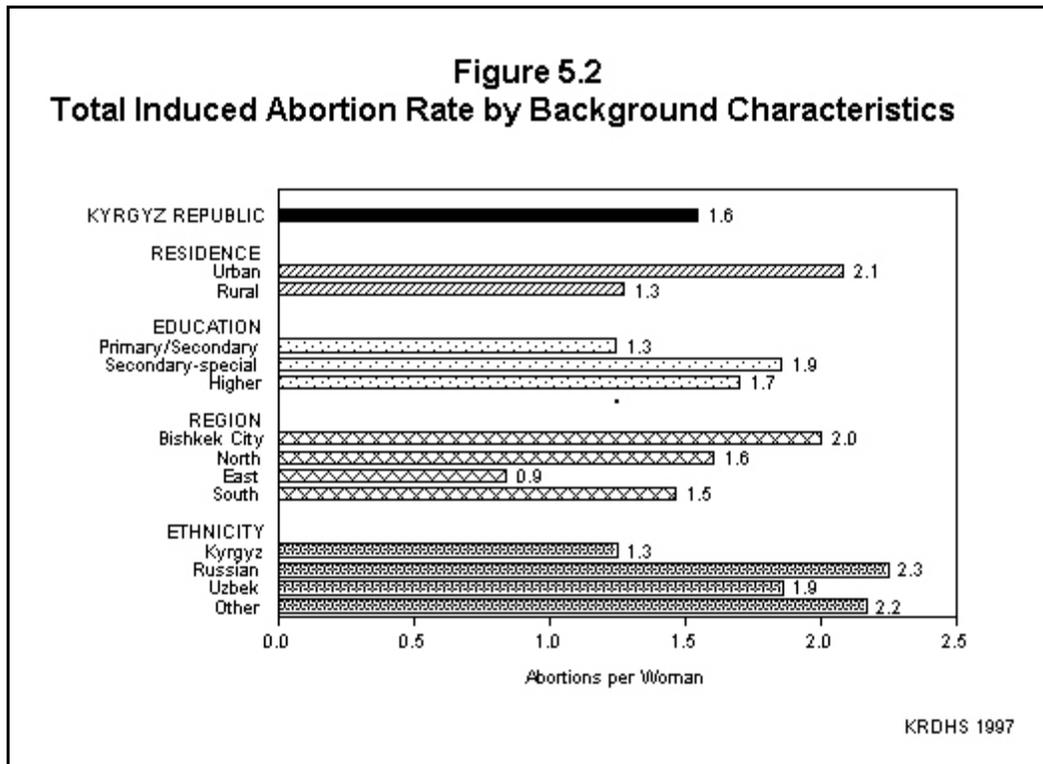
The KRDHS data allow a more direct investigation of trends in induced abortion. Table 5.5 shows values of the TAR for the Kyrgyz Republic by five-year time periods prior to the survey. For the periods 0-4 and 5-9 years prior to the survey, the TARs are almost identical (1.5 and 1.4 abortions per woman, respectively). These statistics imply that, at the national level, over the last ten years there has been little change in the use of induced abortion.

5.5   Abortion Rates From the Ministry of Health

The Ministry of Health has for many years collected abortion data through a registration system that collects information from all government health facilities. Comparison of the MOH data and the KRDHS data will be useful. The data from the MOH is only available in terms of the general abortion rate (GAR, i.e., the number of abortions per 1,000 women age 15-49) so the comparison will be in terms of that index.

Table 5.6 compares estimates of the GAR based on data from the KRDHS and from the MOH for two calendar-year periods: a period in the early 1990s (1991-93) and a period in the mid-1990s (1994-96). For the earlier period the estimates are quite close: 48 per 1,000 for the KRDHS and 49 for the MOH. For the more recent period, the rates are quite different: 45 per 1,000 for the KRDHS and 31 per 1,000 for the MOH. Moreover, the trend of the two sets of rates are quite different. The KRDHS rates show only a modest decline of 6 percent between the two periods, while the MOH rates show a decline of 37 percent.

Table 5.4 Induced abortion rates by background characteristics

Total induced abortion rates for the three-year period prior to the survey and mean number of induced abortions ever done to women age 40-49, by selected background characteristics, the Kyrgyz Republic 1997

Background characteristic	Total induced abortion rate[1]	Mean number of abortions 40-49
Residence		
Urban	2.09	2.23
Rural	1.28	1.29
Region		
Bishkek	2.01	2.38
North	1.61	2.14
East	0.85	0.84
South	1.47	1.13
Education		
Primary/Secondary	1.25	1.22
Secondary-special	1.86	2.29
Higher	1.71	1.76
Ethnicity		
Kyrgyz	1.25	1.14
Russian	2.25	3.32
Uzbek	1.86	1.17
Other	2.17	2.54
Total	1.55	1.63

[1] Women age 15-49

The difference in the rate can, in part, be explained by recent out-migration among the population of Russian and other European ancestry. These are the segments of the population that most frequently use induced abortion. According to official figures, between the 1989 Census and 1997 there has been a net out-migration of 29 percent of the population of Russian and European ancestry (National Statistical Committee, 1989-1997). The heaviest exodus did not occur until 1993 so, for the period 1991-93, the registration system of the MOH recorded events for a national population in which the ethnic groups making the most use of abortion comprised a larger proporation than they did in the 1994-96 period. Some part of the declining trend in the MOH abortion rates is the result of these changes in the ethnic composition of the population.

The situation is different for the KRDHS survey. The survey data only represent the past experience of the population in the Kyrgyz Republic in 1997. This means that the abortion estimate from the survey for the earlier time period is based on a population composition that is not fully representative of the actual population at that time. We conclude that the abortion rates from the survey for the period 1991-93 are too low and that abortion rates have probably declined somewhat in the past six to seven years. However, the changing ethnic mix of the population does not provide an explanation of the difference between the MOH and KRDHS abortion estimates for the period 1994-96 (31 and 45 per 1,000, respectively).

Table 5.5 Trends in age-specific induced abortion

Age-specific induced abortion rates for five-year periods preceding the survey, by mother's age at the time of the abortion, the Kyrgyz Republic 1997

Mother's age	Number of years preceding the survey			
	0-4	5-9	10-14	15-19
15-19	6	9	4	3
20-24	62	42	50	52
25-29	68	77	75	96
30-34	77	77	77	[96]
35-39	55	54	[79]	-
40-44	22	[28]	-	-
45-49	[12]	-	-	-
TAR 15-44	1.45	1.44	-	-
GAR	49	50	-	-

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

Table 5.6 Comparison of abortion rates

General abortion rates (rates per 1,000 women age 15-49), by calendar-year periods, KRDHS and Ministry of Health

Source	Calendar-year period		Percent decline
	1991-93	1994-96	
KRDHS	48.0	45.2	6
Ministry of Health[1]	49.1	30.9	37

[1] Source: Special tabulations provided by the Ministry of Health.

5.6 Contraceptive Use Before Abortion

For each pregnancy terminated by induced abortion in the three years preceding the survey, respondents were asked whether they were using a method of contraception at the time they became pregnant, and if so, what method. Table 5.7 shows the relevant statistics.

Twenty-seven percent of induced abortions were preceded by a contraceptive failure.[3] About half of method failures resulting in abortions occurred while using traditional methods, primarily withdrawal but periodic abstinence and douche as well, and half while using modern methods, primarily the IUD and the condom.   It seems clear that the availability of more reliable methods would reduce the incidence of induced abortion.

Table 5.7 Use of contraception prior to pregnancy

Percentage of pregnancies ended by induced abortion in the three years preceding the survey, by whether contraception was used at the time of becoming pregnant, Kyrgyz Republic 1997

Use of contraception	Live birth	Induced abortion	All pregnancies[1]
No contraception	97.3	68.9	88.5
Any method	2.7	27.2	10.3
Any modern method	1.3	13.1	5.1
Pill	0.3	1.6	0.7
IUD	0.7	6.3	2.7
Injection	0.0	0.6	0.2
Diaphragm/foam/jelly	0.0	0.4	0.1
Condom	0.3	4.2	1.4
Any traditional method	1.4	14.1	5.2
Periodic abstinence	0.2	2.0	0.8
Withdrawal	1.1	10.1	3.7
Douche	0.1	1.9	0.7
Total	100.0	96.1	98.7
Number of pregnancies	1,172	507	1,862

[1] Includes stillbirths and miscarriages

---

[3] A similar finding is reported by the 1995 Kazakhstan Demographic and Health Survey where 23 percent of induced abortions were preceded by a contraceptive failure (NIN and MI, 1996).

5.7   Service Providers and Procedures Used

All women who had an induced abortion in the three years prior to the survey were asked where the abortion was performed, who assisted or provided the service and what method was used. Table 5.8 indicates that a virtually all abortions (98 percent) were performed at public sector institions; 72 percent at a public sector hospital and another 27 percent at a public sector polyclinic. The private sector accounted for less than one percent of reported abortions. The vast majority of abortions (98 percent) were performed under the supervision of a doctor.

Table 5.8 also shows the distribution of abortions by procedure used. Dilation and curettage was the procedure used for almost two-thirds of abortions (62 percent) while vacuum aspiration was employed for about one-third of cases (36 percent). A small proportion of abortions were performed by caesarean section (2 percent). Of the events occurring in hospitals (figures not shown), dilation and curettage was the procedure of choice (70 percent), almost all other abortions were by vacuum aspiration (29 percent) and a small proportion were by caesarean section (1 percent). On the other hand, for abortions performed at polyclinics, dilation and curettage (48 percent) was used less frequently than vacuum aspiration (57 percent).

5.8   Complications of Abortion and Medical Treatment

Respondents who reported having an induced abortion in the three years preceding the survey were also asked if they experienced any health problems following the abortion and, if so, the type of problem and whether they were hospitalized as a result of their problem. Twelve percent of respondents reported having health problems (Table 5.9). The most commonly reported problems were excessive bleeding, infection and lack of menstruation.

Four percent of women who had an abortion in the last three years reported that they had been hospitalized as a result of problems related to their abortion (Table 5.9). The mean length of hospital stay for these women was 11 days. Hospitalization was reported much less frequently for abortions performed by vacuum aspiration than by dilation and curettage (data not shown). The reported rate of hospitalization for health problems following an abortion seems high. Additionally, recourse to hospitalization is a common treatment pattern for reproductive health problems in the Kyrgyz Republic, as in most of the republics of the former Soviet Union, so that the severity of a health problem cannot be readily inferred from the fact of hospitalization.

Table 5.8   Source of services, provider and procedure

Percent distribution of induced abortions in the three years preceding the survey by source of services, type of provider and procedure, Kyrgyz Republic 1997

Characteristic	Percent
Source of services	
Public sector	98.3
Hospital	71.9
Polyclinic	26.4
Private sector	0.2
Clinic	0.2
Missing	1.5
Type of provider	
Doctor	97.9
Nurse, midwife	0.5
Other	.2
Missing	1.4
Procedure	
Dilation and curettage	62.0
Vacuum aspiration	35.9
Caesarean section	2.1
Total	100.0
Number of induced abortions	507

Table 5.9 Health problems following abortion

Percentage of induced abortions in the three years preceding the survey with any reported health problem, selected specific health problems and complications requiring hospitalization, Kyrgyz Republic 1997

Type of health problem	Percent
Any reported heath problem	12.0
Specific health problems	
Excessive bleeding	7.5
Infection	4.4
Lack of menstruation	2.5
Complications requiring hospitalization	6.0
Number of induced abortions	507

CHAPTER 6

OTHER PROXIMATE DETERMINANTS OF FERTILITY

Kia I. Weinstein, Talaibek S. Builashev and Gulnara U. Asimbekova

This chapter addresses the principal factors, other than contraception and abortion, that affect a woman's risk of becoming pregnant. These include nuptiality, sexual activity, postpartum amenorrhea and abstinence from sexual relations. Marriage is an overall indicator of exposure to the risk of pregnancy. More direct measures of exposure relate directly to sexual activity: age at first sexual intercourse and the frequency of intercourse. Postpartum amenorrhea and abstinence affect the interval between births. These factors determine the length and pace of reproductive activity and are, therefore, important in understanding fertility.

6.1 Marital Status

Table 6.1 and Figure 6.1 show the distribution of all women by marital status at the time of the survey. The term "married" refers to legal or formal marriage (civil or religious), while "living together" refers to informal unions. In subsequent tables, these two categories are combined and referred to collectively as "currently married" or "currently in union." Women who are widowed, divorced, and not living together (separated) make up the remainder of the "ever married" or "ever in union" category.

Table 6.1 Current marital status

Percent distribution of women by current marital status, according to age, Kyrgyz Republic 1997

			Marital status					
Age	Never married	Married	Living together	Widowed	Divorced	Not living together	Total	Number
15-19	86.3	11.5	0.7	0.0	0.5	0.9	100.0	743
20-24	19.7	67.8	3.1	0.3	8.0	1.1	100.0	649
25-29	4.6	82.0	4.4	1.0	6.7	1.3	100.0	530
30-34	2.6	84.7	3.7	1.4	6.2	1.3	100.0	630
35-39	0.9	85.3	3.0	3.0	6.3	1.5	100.0	579
40-44	1.5	80.9	2.5	7.0	6.8	1.3	100.0	410
45-49	1.6	80.2	3.0	10.8	3.1	1.1	100.0	307
Total	21.5	66.7	2.8	2.5	5.3	1.2	100.0	3,848

Note: Figures may not add to 100.0 due to rounding.

Most women of reproductive age are currently in a union (67 percent are married and 3 percent are living together). While the vast majority (86 percent) of women age 15-19 have not yet married, two-thirds of women age 20-24 years are married, and eight out of ten women age 25-49 are married. The percentage of women widowed slowly rises with age, and seven percent of women are divorced or separated.

In many societies, marriage is not a sufficiently exact measure of exposure to the risk of pregnancy; therefore, the KRDHS asked women who are not currently in a union whether they have a regular sexual partner, an occasional sexual partner, or no sexual partner at all. Table 6.2 shows the distribution of women who are not currently in a union (whether never married or previously married) by current sexual

relationship. The data reveal that sex outside of marriage is highly unusual in the Kyrgyz Republic; two percent of the unmarried population report having a sexual relationship. Previously married women in their late twenties and early thirties are somewhat more apt to report having a sexual relationship, but women who report such a relationship never exceed four percent, by any background characteristic.

Figure 6.1
Marital Status of Women Age 15-49
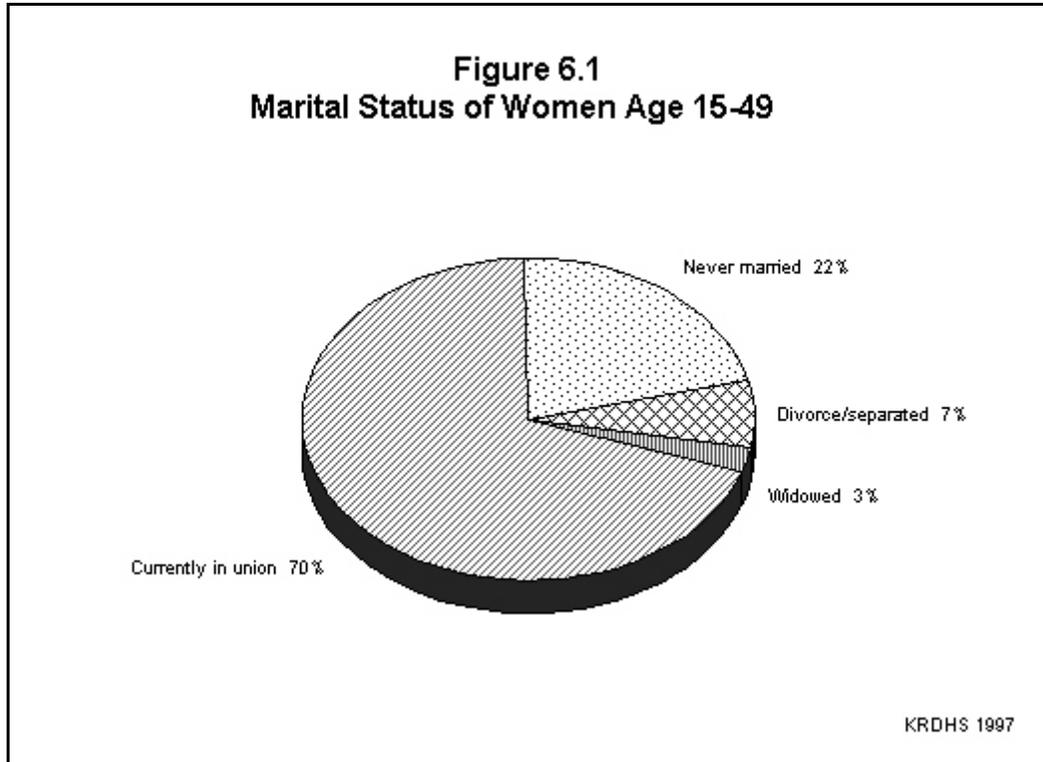
6.2   Age at First Marriage

Marriage generally marks the point in a woman's life when childbearing becomes welcome; it is therefore an important demographic and social indicator. Information on age at first marriage was obtained by asking all ever-married respondents the month and year they started living with their first spouse. As shown in Table 6.3, the median age at first marriage has been hovering around ages 20 and 21 for several decades. Half the women in the Kyrgyz Republic have married before the age of 20.

While the median is a convenient summary measure, not all changes in age at marriage are necessarily reflected in the median. Cohort trends in age at marriage can be more thoroughly examined by comparing the cumulative distributions for successive age groups, as shown in Table 6.3.[1] The distributions in fact reveal little change in age at marriage in the Kyrgyz Republic over the past several decades. While women now in their thirties were somewhat less likely to marry at the youngest ages, women now in their twenties seem to be marrying at the same rate as did women who are now in their forties. The graphing of the distributions in Figure 6.2 summarizes marriage behavior, and shows no particular pattern over time. The age range of marriage is relatively narrow—60 percent of women marry between the ages of 18 and 22 years.

_____

[1]For each cohort, the accumulated percentages stop at the lower age boundary of the cohort to avoid censoring problems. For instance, for the cohort currently age 20-24, accumulation stops with the percentage married by exact age 20.

Table 6.2 Sexual relationships of nonmarried women

Percent distribution of women not currently in union by type of current sexual relationship, according to selected background characteristics, Kyrgyz Republic 1997

| Background characteristic | Never married | | | Widowed, divorced, not living together[1] | | | Total | Number of women |
	No sexual partner	Regular sexual partner	Occasional sexual partner	No sexual partner	Regular sexual partner	Occasional sexual partner		
Age								
15-19	98.0	0.4	0.0	1.3	0.0	0.3	100.0	652
20-24	67.0	0.0	0.6	30.5	0.0	1.9	100.0	189
25-29	30.8	1.5	1.6	61.5	3.0	1.6	100.0	72
30-34	22.3	0.0	0.0	73.1	3.5	1.2	100.0	73
35-39	7.7	0.0	0.0	89.3	2.1	0.9	100.0	68
40-44	9.1	0.0	0.0	90.0	0.0	0.8	100.0	68
45-49	9.8	0.0	0.0	86.9	0.0	3.3	100.0	51
Residence								
Urban	66.3	0.6	0.5	29.8	0.8	1.9	100.0	434
Rural	72.1	0.2	0.0	27.1	0.4	0.3	100.0	739
Region								
Bishkek City	67.1	0.7	1.4	28.4	0.3	2.1	100.0	170
North	70.3	0.7	0.0	27.3	1.1	0.6	100.0	352
East	75.3	0.0	0.0	23.9	0.0	0.8	100.0	63
South	70.0	0.0	0.0	29.0	0.3	0.7	100.0	588
Education								
Primary/Secondary	75.8	0.3	0.1	23.2	0.5	0.2	100.0	739
Secondary-special	51.6	0.5	0.0	45.5	0.6	1.9	100.0	243
Higher	70.8	0.0	0.9	25.3	0.6	2.3	100.0	191
Ethnicity								
Kyrgyz	71.7	0.0	0.1	27.3	0.1	0.8	100.0	749
Russian	53.7	2.7	0.5	37.1	2.5	3.4	100.0	113
Uzbek	76.1	0.0	0.0	22.8	0.8	0.3	100.0	187
Other	65.0	0.5	0.9	32.8	0.9	0.0	100.0	124
Total	70.0	0.3	0.2	28.1	0.5	0.9	100.0	1,173

[1] Widowed, divorced, not living together includes five women who reported having regular sexual partners.

Table 6.4 presents the median age at marriage for women age 25-49 by selected background characteristics. The most pronounced differential is one that is observed in many societies—age at marriage increases with increasing education. A differential of 2 to 3.5 years in the median from the least to the most educated occurs within every age group; women with higher education have a median age at marriage (22.3) that is 2.8 years later than women with a primary or secondary education (19.5). While educational differentials exist in age at marriage, the KRDHS data indicate that there has been no major change in age at marriage over the past 20 years.

Table 6.3 Age at first marriage

Percentage of women who were first married by specific exact age and median age at first marriage, according to current age, Kyrgyz Republic 1997

Current age	Percentage who were first married by exact age:					Percentage who had never married	Number of women	Median age at first marriage
	15	18	20	22	25			
15-19	0.3	na	na	na	na	86.3	743	a
20-24	0.1	21.2	58.4	na	na	19.7	649	19.5
25-29	0.0	11.6	45.0	77.6	92.4	4.6	530	20.3
30-34	0.0	10.4	40.2	68.1	88.5	2.6	630	20.6
35-39	0.5	10.7	38.3	70.6	88.4	0.9	579	20.7
40-44	0.0	15.7	46.7	73.5	91.6	1.5	410	20.2
45-49	0.9	17.7	52.7	72.6	90.2	1.6	307	19.9
25-49	0.2	12.5	43.4	72.2	90.1	2.3	2,456	20.4

na = Not applicable
a Omitted because less than 50 percent of the women in the age group 15 to 19 were first married by age 15.

Figure 6.2
Percentage of Women Married by Exact Age
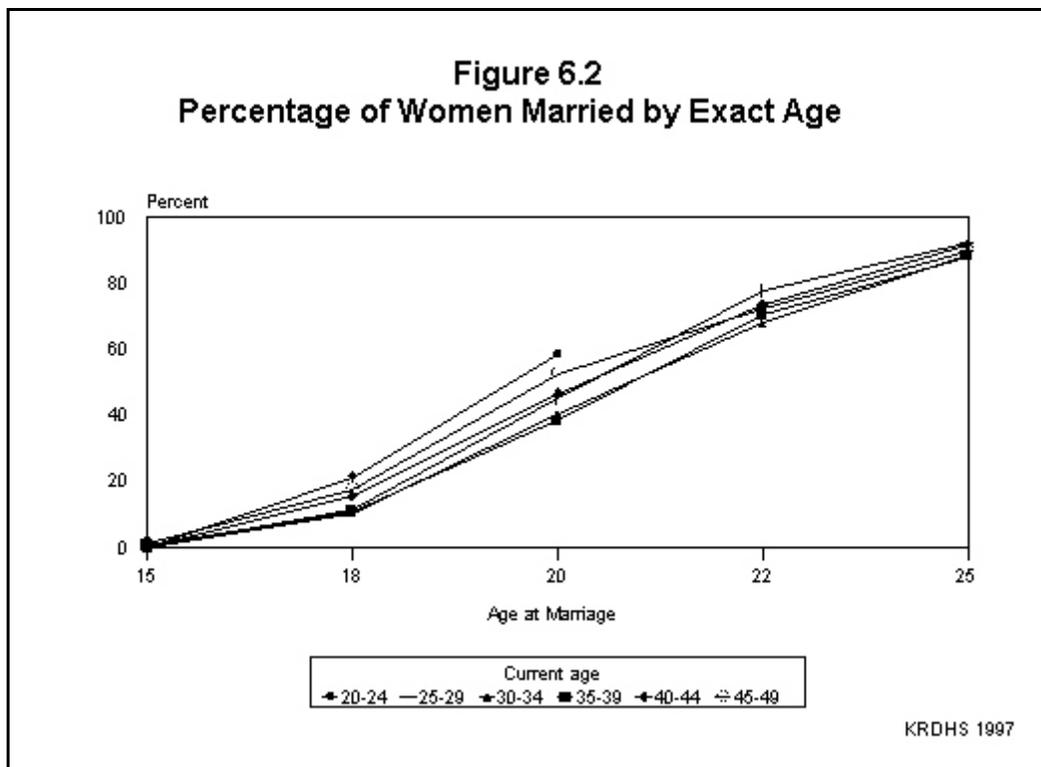
6.3   Age at First Sexual Intercourse

Before using marriage as a proxy for exposure to intercourse, it is best to verify that the two events coincide, i.e., to verify whether or not some women engage in sexual relations prior to marriage. If women do engage in sexual relations prior to marriage, then the proportion of married women would underestimate

76

the percent of women who are sexually active. The KRDHS asked women to state the age at which they first had sexual intercourse. The results, presented in Table 6.5 and 6.6 mirror the figures relating to age at marriage, indicating that in the Kyrgyz Republic, first exposure to sexual intercourse coincides with marriage.

Table 6.4 Median age at first marriage

Median age at first marriage among women age 20-49 years, by current age and selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Current age						Women age 25-49
	20-24	25-29	30-34	35-39	40-44	45-49	
Residence							
Urban	-	20.3	21.2	21.3	20.6	21.1	20.9
Rural	19.4	20.2	20.3	20.4	20.1	19.4	20.2
Region							
Bishkek City	-	20.8	21.3	21.8	21.0	21.3	21.2
North	19.4	20.4	20.7	20.6	19.8	20.1	20.4
East	19.3	19.8	20.6	20.8	19.5	18.8	20.1
South	19.4	20.0	20.4	20.5	20.3	19.5	20.2
Education							
Primary/Secondary	18.8	19.7	19.4	19.7	19.6	19.2	19.5
Secondary-special	19.9	20.4	21.0	21.0	20.6	20.3	20.8
Higher	-	21.5	22.9	22.5	22.1	22.7	22.3
Ethnicity							
Kyrgyz	19.6	20.4	20.6	20.5	20.0	19.7	20.4
Russian	19.6	20.0	20.1	21.3	20.8	21.2	20.6
Uzbek	19.2	20.2	20.5	20.5	20.4	19.2	20.3
Other	-	19.7	21.6	21.3	20.5	20.1	20.6
Total	19.5	20.3	20.6	20.7	20.2	19.9	20.4

Note: In all population subgroups and for the total population, the median age at marriage for women age 15-19 could not be determined because less than 50 percent of those women were first married by age 15, the lower boundary of the age group. In some population subgroups, the median age at marriage for women age 20-24 could not be determined for similar reasons.

Table 6.5 Age at first sexual intercourse

Percentage of women who had first sexual intercourse by exact age 15, 18, 20, 22, and 25, and median age at first intercourse, according to current age, Kyrgyz Republic 1997

Current age	Percentage who had first intercourse by exact age:					Percentage who never had intercourse	Number of women	Median age at first intercourse
	15	18	20	22	25			
15-19	0.2	na	na	na	na	85.7	743	a
20-24	0.3	21.8	59.1	na	na	19.5	649	19.5
25-29	0.0	11.7	46.9	76.0	89.6	4.2	530	20.2
30-34	0.2	10.8	39.9	66.8	86.4	2.3	630	20.7
35-39	0.3	10.1	38.5	68.8	86.4	0.7	579	20.7
40-44	0.0	15.3	45.9	72.1	89.8	1.2	410	20.3
45-49	0.9	17.9	52.7	71.7	89.4	1.6	307	19.9
25-49	0.2	12.5	43.7	70.8	88.0	2.1	2,456	20.4

na = Not applicable
[a] Omitted because less than 50 percent in the age group 15-19 had had intercourse by age 15

77

Table 6.6 Median age at first intercourse

Median age at first sexual intercourse among women age 20-49 years, by current age and selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Current age						Women age 25-49
	20-24	25-29	30-34	35-39	40-44	45-49	
Residence							
Urban	-	20.2	21.1	21.4	20.7	20.9	20.9
Rural	19.4	20.1	20.4	20.4	20.1	19.5	20.2
Region							
Bishkek City	-	20.8	21.3	21.5	21.0	21.0	21.1
North	19.4	20.2	20.9	20.7	19.9	20.2	20.4
East	19.4	19.8	20.7	20.8	19.7	18.8	20.1
South	19.4	20.0	20.4	20.5	20.3	19.5	20.2
Education							
Primary/Secondary	18.8	19.7	19.4	19.8	19.5	19.2	19.5
Secondary-special	119.9	20.3	21.2	21.1	20.8	20.1	20.8
Higher	-	21.5	22.6	22.6	22.1	22.7	22.3
Ethnicity							
Kyrgyz	19.7	20.4	20.8	20.6	20.1	19.8	20.4
Russian	18.9	19.3	19.7	21.0	20.8	20.7	20.3
Uzbek	19.2	20.3	20.6	20.5	20.1	19.2	20.3
Other	-	19.5	21.5	21.7	20.6	20.1	20.6
Total	19.5	20.2	20.7	20.7	20.3	19.9	20.4

Note: The median for women age 15-19 and some groups of women age 20-24 could not be determined because less than 50 percent of the women had had intercourse for the first time by age 15 and 20, respectively.

6.4   Recent Sexual Activity

In the absence of contraceptive use, frequency of sexual intercourse is a direct determinant of pregnancy; therefore, knowledge of frequency is a useful indicator of exposure to pregnancy. Table 6.7 shows the percent distribution of women by sexual activity in the four weeks prior to the survey and the duration of abstinence by whether or not the women have recently had a birth (i.e., whether they are postpartum). Women are considered to be sexually active if they have had sexual intercourse at least once in the four weeks prior to the survey.

Overall, 59 percent of all women interviewed were sexually active in the four weeks preceding the survey. Two percent of women are postpartum abstaining, 16 percent of women are not sexually active for reasons unrelated to childbirth, and 21 percent of women have never had sexual intercourse. Most of the women who are not sexually active are women in their teens (and some women in their early twenties) who have never had intercourse. Approximately three-quarters of women age 25-44 reported being sexually active.

Not surprisingly, women who are using a method of family planning are more likely to be sexually active than women who are not using a method (although much of the difference is due to the fact that many of the women not using a method have not yet had intercourse).

Table 6.7 Recent sexual activity

Percent distribution of women by sexual activity in the four weeks preceding the survey, and among those not sexually active, the length of time they have been abstaining and whether postpartum or not postpartum, according to selected background characteristics and contraceptive method currently used, Kyrgyz Republic 1997

Background characteristic/ contraceptive method	Sexually active in last 4 weeks	Abstaining (postpartum)		Abstaining (not postpartum)		Never had sex	Missing	Total	Number of women
		0-1 years	2+ years	0-1 years	2+ years				
Age									
15-19	11.1	0.9	0.0	2.1	0.0	85.7	0.2	100.0	743
20-24	59.1	5.0	1.3	11.6	2.2	19.5	1.2	100.0	649
25-29	77.7	3.0	0.3	9.9	3.9	4.2	1.1	100.0	530
30-34	76.3	2.0	0.2	13.1	4.8	2.3	1.3	100.0	630
35-39	76.6	0.5	0.0	14.5	7.1	0.7	0.5	100.0	579
40-44	71.6	0.4	0.0	14.5	12.0	1.2	0.3	100.0	410
45-49	61.4	0.0	0.0	21.7	13.8	1.6	1.4	100.0	307
Duration of union (years)									
Never married	0.5	0.0	0.0	0.3	0.5	98.5	0.1	100.0	827
0-4	74.5	6.6	1.0	13.7	3.1	0.0	1.1	100.0	618
5-9	76.7	2.8	0.5	13.9	5.0	0.0	1.2	100.0	657
10-14	80.7	1.5	0.2	11.3	5.2	0.0	1.1	100.0	589
15-19	78.9	0.6	0.0	13.8	6.1	0.0	0.6	100.0	488
20-24	74.5	0.4	0.0	12.4	11.5	0.0	1.1	100.0	377
25-29	61.0	0.0	0.0	26.8	11.6	0.0	0.6	100.0	238
30+	53.0	0.0	0.0	24.4	19.7	0.0	2.8	100.0	55
Residence									
Urban	57.4	1.1	0.6	11.8	6.2	22.2	0.6	100.0	1,290
Rural	60.4	2.2	0.1	11.1	4.6	20.6	1.0	100.0	2,558
Region									
Bishkek City	60.1	0.4	0.0	10.3	6.9	21.8	0.3	100.0	518
North	61.1	2.0	0.2	10.4	5.1	20.3	0.9	100.0	1,188
East	64.4	1.4	0.3	6.2	4.8	22.0	0.9	100.0	215
South	57.5	2.3	0.4	12.8	4.7	21.4	0.9	100.0	1,926
Education									
Primary/Secondary	53.6	2.1	0.5	10.4	5.6	27.0	0.7	100.0	2,053
Secondary-special	68.8	1.7	0.0	13.0	4.7	10.7	1.1	100.0	1,151
Higher	60.8	1.5	0.0	11.3	4.6	21.1	0.8	100.0	643
Ethnicity									
Kyrgyz	58.4	1.9	0.3	10.7	5.4	22.4	0.9	100.0	2,380
Russian	65.5	0.3	0.3	14.2	4.5	14.2	1.0	100.0	412
Uzbek	60.6	3.1	0.2	11.5	3.7	20.4	0.5	100.0	691
Other	56.2	1.0	0.6	12.1	7.3	22.2	0.6	100.0	364
Contraceptive method									
No method	38.9	3.0	0.4	11.3	8.0	37.0	1.3	100.0	2,202
Pill	83.5	0.0	0.0	16.5	0.0	0.0	0.0	100.0	47
IUD	86.2	0.6	0.0	11.4	1.7	0.0	0.1	100.0	1,063
Condom	87.8	0.0	0.7	11.5	0.0	0.0	0.0	100.0	156
Periodic abstinence	92.1	0.0	0.0	5.4	0.0	0.0	2.5	100.0	86
Other	86.8	0.0	0.1	12.0	1.1	0.0	0.0	100.0	294
Total	59.4	1.9	0.3	11.3	5.1	21.2	0.8	100.0	3,848

6.5 Postpartum amenorrhea, abstinence, and insusceptibility

Postpartum amenorrhea refers to the interval between childbirth and the return of menstruation. During this period, the risk of pregnancy is reduced. The duration of reduced risk of conception largely depends on two factors: the length and intensity of breastfeeding, which tends to suppress the resumption of ovulation, and the length of time before the resumption of sexual intercourse. Women who are either amenorrheic or abstaining (or both), are considered insusceptible to the risk of pregnancy.

The percentage of births during the last three years for whom the mothers are postpartum amenorrheic, abstaining, or insusceptible is shown in Table 6.8 by the number of months since birth. These distributions are based on current status data, i.e., on the proportion of births occurring x months before the survey for which mothers are still amenorrheic, abstaining or insusceptible. The estimates of the median and mean durations shown in Tables 6.8 and 6.9 are calculated from the current status proportions at each time period. The prevalence/incidence mean is defined as the number of children whose mothers are amenorrheic (prevalence) divided by the average number of births per month (incidence). The data are grouped in two-month intervals to minimize fluctuations in the estimates.

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, Kyrgyz Republic 1997

Months since birth	Amenor-rheic	Abstaining	Insus-ceptible	Number of births
< 2	(89.9)	(76.3)	(92.8)	53
2-3	90.0	21.7	90.0	78
4-5	56.2	2.1	56.7	67
6-7	49.7	0.0	49.7	62
8-9	45.3	6.2	48.9	61
10-11	34.1	3.2	36.9	66
12-13	25.4	4.3	29.3	78
14-15	27.9	6.7	32.3	68
16-17	11.1	0.5	11.6	57
18-19	9.4	2.0	11.4	56
20-21	5.6	1.9	7.5	60
22-23	5.7	0.0	5.7	74
24-25	0.9	0.0	0.9	61
26-27	1.0	3.9	4.9	55
28-29	0.0	2.6	2.6	64
30-31	0.0	2.7	2.7	68
32-33	0.0	4.8	4.8	67
34-35	0.0	3.2	3.2	66
Total	25.5	7.4	27.7	1,159
Median	6.7	1.7	7.1	-
Mean	9.3	3.2	10.1	-
Prevalence/ Incidence mean[1]	9.0	2.6	9.8	-

Note: Figures in parentheses are based on 25-49 unweighted births.
[1] The prevalence-incidence mean is borrowed from epidemiology and is defined as the number of children whose mothers are amenorrheic (prevalence) divided by the average number of births per month (incidence).

While both postpartum amenorrhea and postpartum abstinence are fairly short in duration, the former is longer than the latter and is, therefore, the principal determinant of the length of postpartum insusceptibility. Most women (93 percent) are insusceptible to pregnancy in the first two months following a birth, but become increasingly susceptible to the risk of pregnancy thereafter. Most women do not abstain for more than two or three months following a birth. The median duration of abstinence is 1.7 months. Fifty percent of women are again susceptible to the risk of pregnancy after 7.1 months, and those who are still insusceptible after 7 months become more susceptible with each passing month. About 30 percent of women remain insusceptible to the risk of pregnancy for more than 12 months following a birth.

Table 6.9 presents the median durations of postpartum amenorrhea, abstinence, and insusceptibility by background characteristics. Postpartum abstinence is generally short in duration, and does not vary much by background characteristics, nor does it greatly affect the duration of insusceptibility. Median durations of amenorrhea do vary according to age; older women (age 30 and above) remain amenorrheic for two

months longer, on average, than do younger women. Women in the South Region remain amenorrheic for about three months longer, on average, than women in Bishkek or the North Region. The practice of breastfeeding is nearly universal in the Kyrgyz Republic, although mothers begin supplementing with other foods or liquids quite early; see Chapter 10 for a discussion of breastfeeding practices.

Table 6.9 Median duration of postpartum amenorrhea, abstinence, and insusceptibility by background characteristics

Median number of months of postpartum amenorrhea, postpartum abstinence, and postpartum insusceptibility, by selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Postpartum amenorrhea	Postpartum abstinence	Postpartum insuscep- tibility	Number of births
Age				
<30	6.6	1.7	6.8	781
30+	8.6	1.8	8.9	379
Residence				
Urban	7.0	1.5	7.0	262
Rural	6.5	1.8	7.1	898
Region				
Bishkek City	5.4	0.8	5.4	80
North	5.7	1.6	6.1	327
East	6.3	1.7	6.5	78
South	8.9	1.9	9.4	674
Education				
Primary/Secondary	6.6	1.8	6.8	607
Secondary-special	9.1	1.6	10.1	411
Higher	5.7	1.9	5.7	141
Ethnicity				
Kyrgyz	6.7	1.8	7.2	762
Russian	4.6	1.9	4.6	50
Uzbek	10.2	1.9	10.6	259
Other	3.9	0.6	3.9	89
Total	6.7	1.7	7.1	1,159

Note: Medians are based on current status.

6.6   Termination of Exposure to Pregnancy

Above age 30, the risk of pregnancy declines with age as increasing proportions of women become infecund. Although the onset of infecundity is difficult to determine for an individual woman, it can be estimated for a population. Table 6.10 presents data on two indicators of decreasing exposure to the risk of pregnancy for women age 30 years and older: menopause and long-term abstinence.

The percentage of women who are in menopause refers to the proportion of currently married women who are neither pregnant nor postpartum amenorrheic and have not had a menstrual period in the six months preceding the survey, or who report themselves as being menopausal. Few women are menopausal before

reaching their forties, after which time the proportion of menopausal women increases with age, from 13 percent among women age 44-45 to 42 percent among women age 48-49.

The percentage of women practicing long-term abstinence refers to the proportion of currently married women who have not had sexual intercourse in the three years preceding the survey. It can be seen that long-term abstinence is not a factor in reducing the fertility of older women.

A potentially more significant factor than long-term abstinence in reducing the risk of exposure to pregnancy is divorce, widowhood, and separation. As was shown in Table 6.1, 15 percent of women age 40-44 and 15 percent of women age 45-49 are currently widowed, divorced, or separated. If these women do not remarry and are not sexually active, they represent a contributing factor to loss of exposure to pregnancy.

Table 6.10 Termination of exposure to the risk of pregnancy

Indicators of menopause and long-term abstinence among currently married women age 30-49, by age, Kyrgyz Republic 1997

Age	Menopause[1]		Long-term abstinence[2]	
	Percent	Number	Percent	Number
30-34	1.4	458	0.0	557
35-39	1.9	471	0.0	511
40-41	4.0	130	0.0	133
42-43	6.3	128	0.0	131
44-45	12.5	135	0.0	138
46-47	27.8	110	0.8	110
48-49	42.4	86	7.4	86
Total	7.4	1,517	0.4	1,666

[1] Percentage of nonpregnant, nonamenorrheic currently married women whose last menstrual period occurred six or more months preceding the survey or who report that they are menopausal.
[2] Percentage of currently married women who did not have intercourse in the three years preceding the survey.

CHAPTER 7

FERTILITY PREFERENCES

Kia I. Weinstein, Talaibek S. Builashev and Apisa K. Kushbakieva

Women interviewed in the 1997 KRDHS were asked several questions in order to determine their fertility preferences: their desire to have a(another) child; the length of time they would prefer to wait before having a(another) child; and, if they were to live their lives again, the number of children they would choose to have. These data make the quantification of fertility preferences possible and, in combination with the data on contraceptive use, allow estimation of the demand for family planning, according to the desire to space or limit births.

7.1   Desire for More Children

Table 7.1 and Figure 7.1 show the percent distribution of currently married women by their fertility preferences. Nearly half of married women (45 percent) want no more children. An additional one-fourth of women want another child, but want to wait two or more years before having their next birth. Thus, 70 percent of married women in the Kyrgyz Republic are potentially in need of contraception, for the purpose of either limiting their family size or spacing births.

Table 7.1 Fertility preferences by number of living children

Percent distribution of currently married women by desire for more children, according to number of living children, Kyrgyz Republic 1997

Desire for children	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
Have another soon[2]	55.2	23.3	9.2	9.7	5.9	0.9	2.3	12.4
Have another later[3]	6.8	49.3	38.9	25.9	8.6	3.0	1.9	25.5
Have another, undecided when	10.3	5.5	2.8	1.9	0.4	0.0	0.0	2.6
Undecided	5.6	4.7	11.7	7.5	7.6	1.3	0.0	6.9
Want no more	1.2	11.1	31.4	47.0	73.2	85.6	86.8	45.1
Sterilized	0.8	0.4	2.0	2.5	1.1	2.7	3.7	1.8
Declared infecund	20.1	5.6	4.0	5.6	3.2	6.6	5.3	5.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	146	439	688	553	405	231	213	2,675

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

The fertility preferences of married women are shown according to the number of children they already have in Table 7.1 and Figure 7.2. The proportion of women wanting no more children increases sharply as the number of children they already have rises. Only 11 percent of women with one child report wanting no more. However, among women with four children, nearly three-quarters (73 percent) want no more children.

Figure 7.1
Fertility Preferences Among
Currently Married Women 15-49

Sterilized/Infecund 8%
Want child soon 12%
Want no more children 45%
Want child later 26%
Undecided 10%
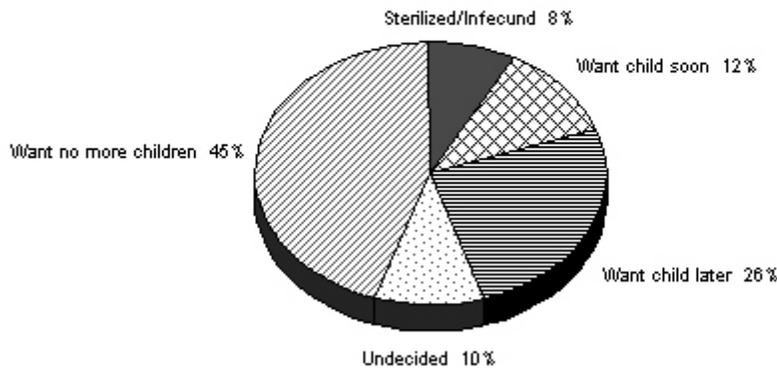
KRDHS 1997

While most women with only one child want another child, they are most likely to want to wait two or more years before having that child, and are thus in need of family planning for spacing purposes. The potential demand for family planning exists at every parity; at lower parities the potential demand is primarily in the form of need for spacing; as parity increases, the demand shifts to need for limiting.

Table 7.2 shows statistics on the fertility preferences of currently married women by age. The age pattern and pace at which women want no more children is noteworthy. Among women age 15-19 and 20-24, only a small percentage want no more children (2 and 9 percent, respectively). By age 25-29, one in five women (20 percent) want no more children and by age 30-34, nearly half (46 percent) want no more children. It should be noted that these women have 20 years of potential childbearing ahead of them and, to the extent they remain exposed to the risk of pregnancy, will need contraceptive protection or abortion services if they are to achieve their stated preference for having no more children. Among women age 35 and above, 73 percent want no more children.

In the Kyrgyz Republic, nearly half of women of reproductive age would prefer to have no more children, and many women come to that decision while still having many fertile years ahead of them. For some of these women, the most appropriate method of contraception may be a long-term method, such as female sterilization. While 59 percent of married women report knowing of the method (Table 4.1), only 2 percent of married women are using the method (Table 4.4). The family planning program may want to consider increasing information about the method and increasing its availability.

Table 7.3 presents the percentage of currently married women who want no more children by number of living children and selected background characteristics. While the overall proportion of women who want no more children does not vary greatly by background characteristics, there are striking differences in how quickly women with different background characteristics reach the point of wanting no more children. For example, equal proportions of urban and rural women want no more children (48 and 47 percent,

respectively). However, one-half of urban women want no more children once they have two children; the same proportion is not reached among rural women until after they have three children.

Figure 7.2
Fertility Preferences Among Currently
Married Women by Number of Living Children

KRDHS 1997
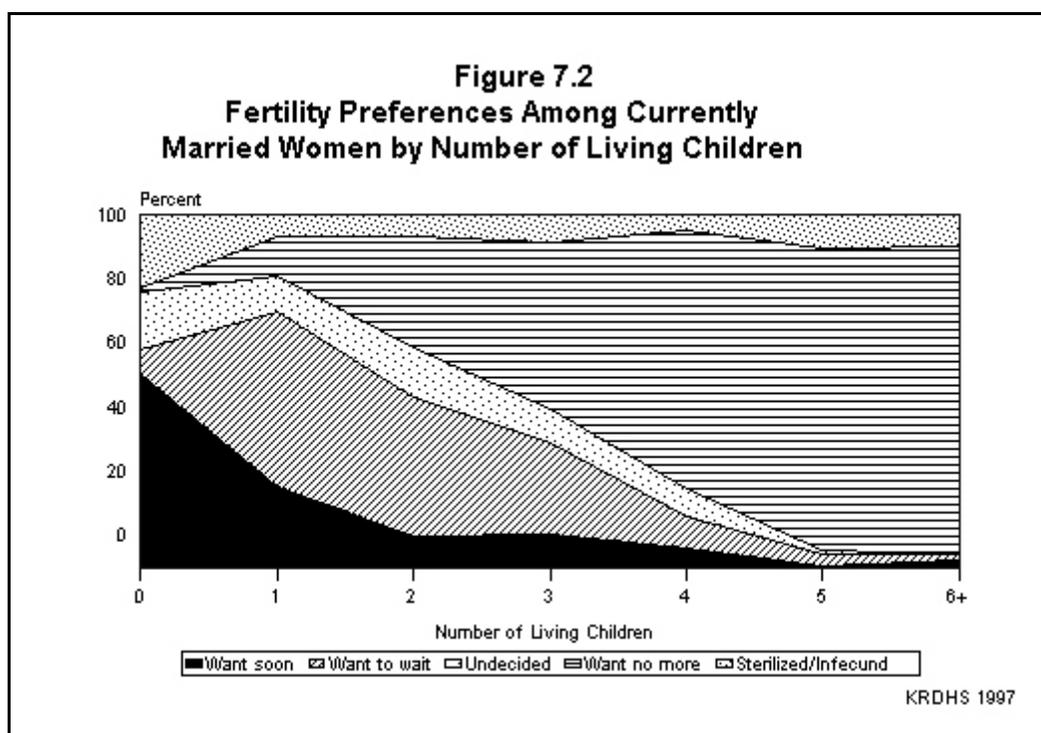
Table 7.2 Fertility preferences by age

Percent distribution of currently married women by desire for more children, according to age, Kyrgyz Republic 1997

Desire for children	Age of woman							Total
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Have another soon[1]	24.8	19.6	17.3	12.4	11.5	2.2	1.2	12.4
Have another later[2]	60.2	57.0	44.3	23.9	5.4	0.5	0.1	25.5
Have another, undecided when	3.3	4.5	3.7	3.4	2.0	0.0	0.2	2.6
Undecided	6.6	8.0	12.0	10.8	3.8	1.5	0.8	6.9
Want no more	1.9	9.3	20.1	46.1	68.7	78.7	75.1	45.1
Sterilized	0.0	0.0	0.6	0.5	1.8	6.1	5.4	1.8
Declared infecund	3.2	1.6	2.0	2.9	6.8	11.0	17.1	5.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	91	460	458	557	511	342	256	2,675

[1] Want next birth within 2 years
[2] Want to delay next birth for 2 or more years

Table 7.3 Desire to limit childbearing

Percentage of currently married women who want no more children, by number of living children and selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
Residence								
Urban	2.9	20.5	49.9	60.9	77.9	(87.0)	(90.9)	47.8
Rural	1.3	4.5	22.6	43.6	73.3	88.5	90.5	46.5
Region								
Bishkek City	4.3	26.4	59.5	68.6	(88.5)	(100.0)	(100.0)	46.6
North	2.3	13.2	43.1	49.5	74.6	93.1	91.0	48.1
East	*	6.2	26.2	37.7	70.4	92.7	92.3	49.3
South	(0.0)	1.3	13.6	47.5	73.6	85.1	89.9	46.0
Education								
Primary/Secondary	0.9	5.0	23.8	45.2	75.6	88.6	93.1	48.7
Secondary-special	2.3	14.4	37.5	50.7	69.5	89.8	(76.8)	44.5
Higher	(3.4)	19.9	45.3	57.4	(80.1)	*	*	46.4
Ethnicity								
Kyrgyz	1.4	2.8	20.0	37.5	70.4	90.2	90.1	44.2
Russian	(3.3)	29.9	72.7	(86.4)	*	*	*	51.9
Uzbek	*	(2.0)	24.2	67.8	84.9	(85.6)	*	53.8
Other	*	22.5	42.9	63.2	*	*	*	44.5
Total	2.0	11.5	33.4	49.5	74.2	88.3	90.5	46.9

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

Most of the differences in how quickly women with different background characteristics reach the point of wanting no more children occur below parity four. Most women in Bishkek want no more children after only having two (60 percent of women in Bishkek with two children want no more). Women in the East and South Regions are the least likely to want no more children when they have three or fewer children; by the time women have four children, regional variations are slim. Likewise, across education levels, there is no clear pattern for parity 4 or higher; however, at lower parities, women with more education have a lower threshold for wanting no more children. At all parities, Russian women are more likely than women of other ethnic groups to want to cease childbearing.

7.2   Need for Family Planning Services

Women who are potentially in need of family planning are those who either want to wait two or more years before their next birth (need for spacing), or want to stop childbearing altogether (need for limiting). Women who want to space or limit their childbearing, but are not using contraception, are considered to have an *unmet need* for family planning. Women who are using family planning methods are said to have a *met need* for family planning. The sum of unmet need and met need constitutes the *total demand* for family planning. Table 7.4 shows statistics on unmet need, met need and total demand for family planning, according to whether the need is for spacing or limiting births. Findings pertain to currently married women.

Table 7.4 Need for family planning services

Percentage of currently married women with unmet need for family planning, met need for family planning, and the total demand for family planning services, by selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Unmet need for family planning[1]			Met need for family planning (currently using)[2]			Total demand for family planning			Percentage of demand satis-fied	Number of women
	For spacing	For limiting	Total	For spacing	For limiting	Total	For spacing	For limiting	Total		
Age											
15-19	11.5	0.0	11.5	28.7	0.6	29.3	40.2	0.6	40.8	71.8	91
20-24	10.9	2.2	13.2	43.9	4.8	48.7	54.8	7.0	61.8	78.7	460
25-29	6.6	2.6	9.2	45.0	11.9	56.9	51.5	14.5	66.0	86.1	458
30-34	4.1	3.5	7.6	34.2	35.7	69.9	38.3	39.2	77.5	90.2	557
35-39	0.9	7.9	8.8	13.9	55.6	69.5	14.8	63.4	78.3	88.8	511
40-44	0.5	17.0	17.5	1.0	63.2	64.2	1.5	80.2	81.7	78.6	342
45-49	0.0	20.3	20.3	1.2	44.7	45.8	1.2	64.9	66.1	69.3	256
Residence											
Urban	3.3	7.4	10.7	30.4	35.3	65.8	33.8	42.8	76.5	86.0	856
Rural	5.0	7.0	12.1	24.3	32.3	56.6	29.3	39.4	68.7	82.4	1,819
Region											
Bishkek City	3.8	5.7	9.5	33.4	35.4	68.9	37.3	41.1	78.4	87.9	349
North	3.8	9.3	13.1	27.6	31.6	59.2	31.4	40.9	72.3	81.9	836
East	4.6	9.7	14.3	22.3	31.7	54.0	26.9	41.4	68.3	79.0	152
South	5.1	5.9	11.0	24.0	34.0	58.0	29.1	39.9	69.0	84.0	1,338
Education											
Primary/Secondary	4.4	7.9	12.3	23.9	34.3	58.2	28.3	42.2	70.5	82.6	1,314
Secondary-special	5.0	6.8	11.8	28.3	31.2	59.4	33.3	37.9	71.2	83.5	908
Higher	3.8	5.8	9.5	29.1	34.5	63.7	32.9	40.3	73.2	87.0	452
Ethnicity											
Kyrgyz	5.2	7.2	12.4	25.8	29.9	55.8	31.1	37.1	68.2	81.8	1,632
Russian	1.2	7.4	8.7	31.6	40.2	71.8	32.8	47.7	80.5	89.2	300
Uzbek	4.2	5.6	9.8	21.5	41.2	62.7	25.7	46.9	72.6	86.4	504
Other	3.9	9.8	13.8	32.4	30.7	63.2	36.4	40.6	76.9	82.1	240
Total	4.5	7.2	11.6	26.3	33.3	59.5	30.7	40.5	71.2	83.6	2,675

[1] Unmet need for *spacing* includes pregnant women whose pregnancy was mistimed, amenorrheic women whose last birth was mistimed, and 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 women who are unsure whether they want another child or who want another child but are unsure when to have the birth. Unmet need for *limiting* refers to pregnant women whose pregnancy was unwanted, amenorrheic women whose last child was unwanted, and women who are neither pregnant nor amenorrheic and who are not using any method of family planning and who want no more children. Excluded from the unmet need category are menopausal or infecund women.
[2] Using for *spacing* is defined as women who are using some method of family planning and say they want to have another 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 here.

Twelve percent of married women in the Kyrgyz Republic have an unmet need for family planning services, 5 percent for spacing births and 7 percent for limiting births. Combined with the 60 percent of married women who are currently using contraception, the total demand for family planning comprises 71 percent of married women. While contraceptive prevalence is quite high, if all married women who say they want to space or limit their births were to use methods, contraceptive prevalence would increase from 60 to 71 percent of married women.

Unmet need for spacing generally declines with increasing age, as unmet need for limiting increases with age; this pattern reflects the pattern of demand by age. Levels of unmet need do not vary greatly by urban/rural residence, region, education or ethnicity; all levels fall within the range of 9 to 14 percent (see Figure 7.3).

Figure 7.3
Percentage of Currently Married Women With Unmet Need and With Met Need for Family Planning Services by Background Characteristics

Characteristic	Met need value
KYRGYZ REPUBLIC	71
RESIDENCE	
Urban	77
Rural	69
EDUCATION	
Primary/Secondary	71
Secondary-special	71
Higher	73

Percent

☒ Unmet need ☐ Met need

KRDHS 1997
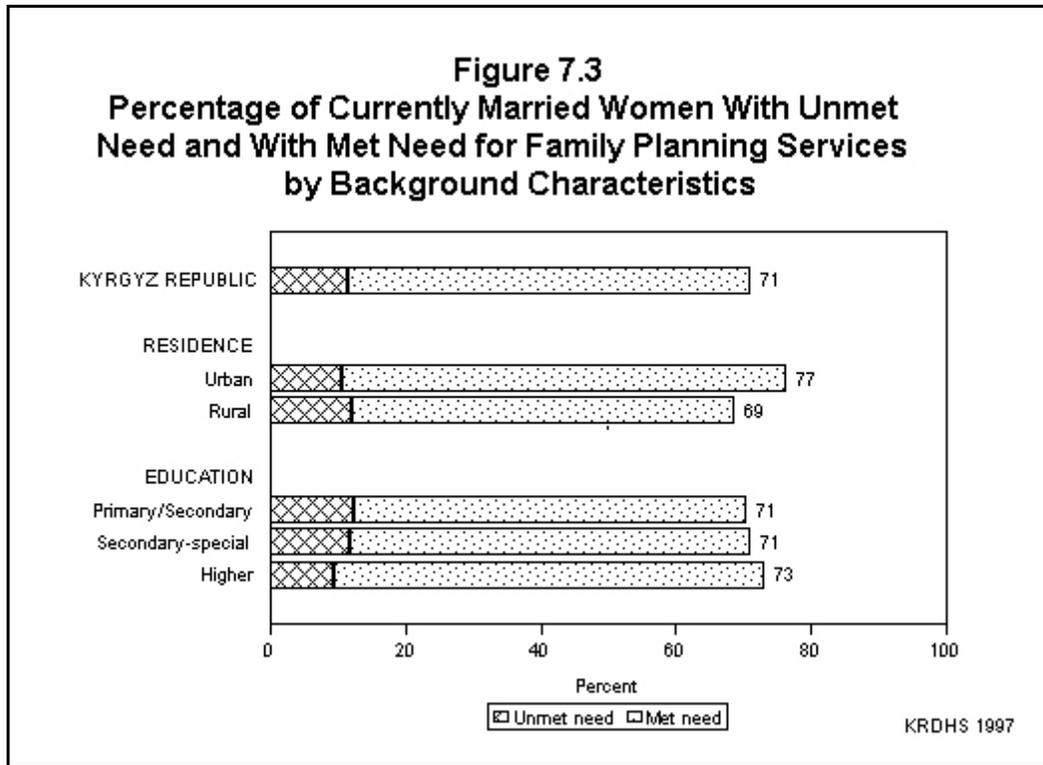
7.3   Ideal Family Size

Thus far, fertility desires have been examined relative to respondents' current family size. However, the KRDHS also asked women how many children they would choose to have if they could go back to the time they had no children, i.e., the number of children they consider to be ideal. Overall, the number of children most commonly reported as ideal (the modal category) is four (Table 7.5 shows that 39 percent of women gave this response).

Table 7.5 also shows the percent distribution of women by the number of children they would ideally like to have, according to the number of children they actually have. While the question regarding ideal family size is meant to be independent of the number of children the respondent already has, there is usually a correlation between ideal and actual number of children. This is because women who want larger families will tend to achieve larger families, and because women may adjust their ideal family size upwards as their actual family size increases. It can be seen that mean ideal family size generally rises as the number of children a woman already has increases. Mean ideal family size among women with one or no children is three, and gradually rises until reaching six children among women with six or more children. Only one in five women report an ideal family size of only two children.

Table 7.5 Ideal and actual 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, Kyrgyz Republic 1997

Ideal number of children	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
0	0.2	0.0	0.2	0.4	0.0	0.0	0.0	0.2
1	4.8	3.7	1.0	0.6	0.3	0.0	0.0	2.1
2	32.0	32.5	23.6	9.1	4.9	2.9	0.6	20.1
3	17.7	17.8	18.1	14.4	3.1	2.9	1.6	13.8
4	35.7	35.7	41.9	45.7	54.0	28.8	20.0	39.2
5	2.5	4.1	6.3	12.4	16.0	36.7	11.0	9.2
6+	1.4	2.6	3.9	7.6	12.1	15.0	42.4	7.5
Nonnumeric response	5.6	3.7	4.9	9.9	9.6	13.6	24.5	7.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	1,022	548	783	585	436	246	227	3,848
All women:								
Mean ideal number[2]	3.0	3.1	3.5	4.0	4.3	4.8	6.0	3.7
Number of women	964	528	745	528	395	213	171	3,543
Currently married women:								
Mean ideal number[2]	3.1	3.1	3.5	4.0	4.4	4.8	6.0	3.9
Number of women	142	423	656	502	368	199	161	2,451

[1] Includes current pregnancy
[2] The means exclude women who gave nonnumeric responses.

Table 7.6 presents the mean ideal number of children for all women by age and selected background characteristics. The mean ideal number of children gradually increases with age of the respondent; the mean among the youngest women interviewed (3.1) is 1.5 children fewer than it is among the oldest women interviewed (4.6). The most significant finding regarding ideal family size is the fact that differentials that are apparent among older women are much less pronounced among younger women. For example, rural women age 45-49 report a mean ideal family size of 5.5 children, 2.2 children more than urban women of the same age; among women under the age of 30, the urban/rural ideals differ only by 0.6 children. The same narrowing of differentials occurs at the regional level. Women age 45-49 in the East Region report an ideal family size that is more than three children greater than women in Bishkek; women in their twenties report ideal family sizes that are within 0.6 children across regions. Educational and ethnic differentials are also less pronounced among younger women.

7.4   Wanted and Unwanted Fertility

There are two ways of estimating levels of unwanted fertility from the KRDHS data. One is based on reports of the wanted status of recent births. For each child born in the three years before the survey, and for each current pregnancy, women were asked whether the pregnancy was wanted at that time (planned), wanted at a later time (mistimed), or not wanted at all (unwanted). These data may lead to underestimates of unplanned childbearing, since women may retrospectively declare unwanted pregnancies as planned once the children are born. Another way of measuring unwanted fertility utilizes the data on ideal family size to calculate what the total fertility rate would be if all unwanted births were avoided. This measure may also suffer from underestimation to the extent that women are unwilling to report an ideal family size lower than their actual family size. Estimates using these two approaches indicate at least the minimum level of unwanted fertility.

Table 7.6 Mean ideal number of children by background characteristics

Mean ideal number of children for all women, by age and selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Age of woman							Total
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Residence								
Urban	2.7	2.9	3.1	3.4	3.3	3.4	3.3	3.1
Rural	3.3	3.6	3.7	4.1	4.5	4.5	5.5	4.0
Region								
Bishkek City	2.3	2.6	2.8	3.0	3.1	2.8	2.6	2.7
North	2.9	3.3	3.4	3.7	4.0	4.0	5.1	3.6
East	3.0	3.6	4.0	4.2	4.7	5.1	5.9	4.1
South	3.3	3.7	3.7	4.0	4.3	4.6	5.0	3.9
Education								
Primary/Secondary	3.1	3.6	3.7	4.1	4.4	4.6	5.2	3.8
Secondary-special	3.1	3.4	3.4	3.7	3.9	3.9	4.3	3.6
Higher	2.9	3.0	3.1	3.3	3.6	3.5	3.5	3.3
Ethnicity								
Kyrgyz	3.3	3.7	3.8	4.1	4.4	4.6	5.5	4.0
Russian	2.0	2.3	2.4	2.3	2.6	2.3	2.5	2.4
Uzbek	3.1	3.4	3.4	3.7	4.1	(4.2)	*	3.6
Other	2.6	2.7	3.2	3.1	(3.6)	(3.5)	(3.7)	3.1
Total	3.1	3.4	3.5	3.8	4.1	4.1	4.6	3.7

Note: Parentheses indicate a figure is based on 25 to 49 unweighted women. An asterisk indicates that a figure is based on fewer than 25 unweighted women and has been suppressed.

Table 7.7 shows the percent distribution of births in the three years before the survey (and current pregnancies) by whether the birth was wanted then, wanted later, or not wanted at all. Overall, 13 percent of births in the three-year period were reported to be unplanned (unwanted or wanted later). The majority of lower parity births (below 4) which were unplanned were reported to be wanted later; however, the majority of higher parity births (4 or more) which were unplanned were reported to be born after the woman did not want any more children. Fifteen percent of recent higher order births were born to women who did not want any more children.

Table 7.8 presents "wanted" fertility rates. Wanted fertility represents the level of fertility that would have prevailed in the three years before the survey if all unwanted births had been prevented. Unwanted births are those which exceed the number considered ideal by the respondent. The wanted fertility rate is calculated in the same manner as the total fertility rate, but unwanted births are excluded from the numerator. The small proportion of women who gave a nonnumeric response to the question on ideal family size are assumed to have wanted all their births. A comparison of the total wanted fertility rate and the actual fertility rate suggests the potential demographic impact of avoiding unwanted births.

Table 7.7 Fertility planning status

Percent distribution of births in the three years preceding the survey and current pregnancies, by fertility planning status, according to birth order and mother's age, Kyrgyz Republic 1997

Birth order and mother's age	Planning status of birth				Total	Number of births
	Wanted then	Wanted later	Not wanted	Missing		
Birth order						
1	96.7	2.2	0.7	0.4	100.0	392
2	85.9	10.9	2.6	0.7	100.0	390
3	84.0	12.3	3.7	0.0	100.0	273
4+	77.1	6.2	15.4	1.3	100.0	339
Age at birth						
<20	89.9	7.4	1.8	0.9	100.0	177
20-24	87.2	9.1	2.8	0.9	100.0	510
25-29	90.9	6.6	2.5	0.0	100.0	342
30-34	83.4	7.8	8.3	0.5	100.0	244
35-39	77.2	4.7	17.0	1.1	100.0	100
40-44	*	*	*	*	100.0	20
Total	86.4	7.6	5.4	0.6	100.0	1,393

Note: Birth order includes current pregnancy. An asterisk indicates that a figure is based on fewer than 25 births (and current pregnancies) and has been suppressed.

As seen in Table 7.5, women who report an ideal family size which is smaller than what they actually have are in the minority; therefore, differences between wanted and actual fertility rates are extremely low in the Kyrgyz Republic. The wanted fertility rate is only 0.3 children lower than the actual rate, and there are no large differentials by background characteristics.

Table 7.8 Wanted fertility rates

Total wanted fertility rates and total fertility rates for the three years preceding the survey, by selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Total wanted fertility rate	Total fertility rate
Residence		
Urban	2.1	2.3
Rural	3.6	3.9
Region		
Bishkek City	(1.6)	(1.7)
North	(2.9)	(3.1)
East	(3.8)	(4.3)
South	(3.5)	(3.9)
Education		
Primary/Secondary	3.3	3.7
Secondary-special	(3.0)	(3.3)
Higher	(2.3)	(2.4)
Ethnicity		
Kyrgyz	3.3	3.6
Russian	(1.4)	(1.5)
Uzbek	(3.8)	(4.2)
Other	(2.5)	(2.7)
Total	3.1	3.4

Note: Rates are based on births to women 15-49 in the period 1-36 months preceding the survey. The total fertility rates are the same as those presented in Table 3.2. Rates in parentheses indicate that one or more of the component age-specific rates is based on fewer than 250 woman-years of exposure.

CHAPTER 8

INFANT AND CHILD MORTALITY

Naken K. Kasiev, Jeremiah M. Sullivan, Duishe K. Kudayarov and Talaibek S. Builashev

8.1 Background and Assessment of Data Quality

This chapter presents information on mortality among children under five years of age. The rates shown provide information on levels and time trends in mortality as well as differentials between population subgroups. The information on mortality differentials should be of particular use to the agencies providing health services because the population subgroups at high risk of mortality are identified.

The rates of mortality presented in this chapter are defined as follows:

- **Neonatal mortality (NN)**: the probability of dying within the first month of life,
- **Postneonatal mortality (PNN)**: the difference between infant and neonatal mortality,
- **Infant mortality ($_1q_0$)**: the probability of dying between birth and the first birthday,
- **Child mortality ($_4q_1$)**: the probability of dying between exact ages one and five,
- **Under-five mortality ($_5q_0$)**: the probability of dying between birth and the fifth birthday.

All rates are expressed as deaths per 1,000 live births, except child mortality which is expressed as deaths per 1,000 children surviving to age one.

The mortality estimates were calculated from information in the reproductive section of the women's questionnaire. In the KRDHS, survey respondents were asked to report reproductive events in terms of international definitions. The definition of a live birth is a birth, irrespective of the duration of pregnancy, which after separation from the mother breaths or shows any other signs of life such as beating of the heart or movement of voluntary muscles. (United Nations, 1992).

The reproductive section of the KRDHS questionnaire includes a pregnancy history in which specific questions are asked about each pregnancy that a woman has had. For each live birth reported in the pregnancy history, questions are asked about the month and year of birth, sex, survivorship status and current age (for surviving children) or age at death (for deceased children).

The accuracy of mortality estimates calculated from pregnancy history data depends upon the sampling variability of the estimates and on non-sampling error (i.e., the completeness and accuracy with which births and deaths are reported and recorded). Sampling variability is discussed in the next section of this chapter. Typically, the most serious source of non-sampling error in mortality data collected by a retrospective survey is underreporting of the births and deaths of children who do not survive (United Nations, 1982). Such underreporting results in underestimated mortality rates.

When there is underreporting of deceased children in a survey, it is usually most severe for deaths which occur in early infancy, i.e., in the neonatal period. When underreporting of early neonatal deaths occurs, it results in an abnormally low ratio of neonatal mortality to infant mortality. In retrospective surveys, underreporting of early infant deaths is usually more common for births that occurred further back in time than for births occurring close to the time of the survey. Hence, when considering the quality of mortality data, it is useful to examine the ratios of neonatal to infant mortality for different retrospective time periods.

Neonatal and infant mortality rates from the KRDHS are shown in Table 8.1. For the periods 0-4, 5-9 and 10-14 years before the survey, the values of the ratio of the former to the latter are .52, .49 and .33, respectively. In countries known for having complete and accurate mortality data, at a level of infant mortality between 60 and 70 per 1000 (a range which includes the infant mortality rates estimated by the KRDHS), the value of this ratio is typically between .40 and .50.[1] For the time periods 0-4 and 5-9 years before the survey, the ratios for the Kyrgyz Republic are in this range. Accordingly, this inspection of the data does not suggest substantial underreporting of neonatal deaths for the 10-year period preceding the survey.

8.2   Levels and Trends in Early Childhood Mortality

Table 8.1 shows KRDHS infant and childhood mortality estimates for 0-4, 5-9, and 10-14 years before the survey. For the period 1992-97 (i.e., mid-1992 to mid-1997), the infant mortality rate was 61 per 1,000 births. The estimates of neonatal and postneonatal mortality were 32 and 30 per 1,000. The estimate of child mortality (age 1 to age 5) was much lower—12 per 1,000. The under-five mortality rate for the period 1992-97 was 72 per 1,000.

As mentioned above, in KRDHS, infant and child mortality rates were calculated based on the international definition of live birth, which is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. Each such birth is considered live-born. Infant deaths are deaths of live born infants under one year of age (United Nations, 1992). As will be discussed below, the use of the United Nations definition results in more pregnancy terminations being classified as live births and early infant deaths than is the case using the Ministry of Health's protocols.

Table 8.1 Infant and child mortality

Infant and child mortality rates by five-year periods preceding the survey, Kyrgyz Republic 1997

Years preceding survey	Calendar period[a]	Neonatal mortality (NN)	Postneonatal mortality (PNN)	**Infant mortality ($_1q_0$)**	Child mortality ($_4q_1$)	**Under-five mortality ($_5q_0$)**
0-4	1992-97	31.6	29.7	61.3	11.7	72.3
5-9	1987-92	34.6	36.2	70.8	9.0	79.2
10-14	1982-87	26.8	55.2	82.0	18.5	99.0

[a] Calendar year time periods are from midyear to midyear.

For the fifteen-year period preceding the survey, the estimates of infant mortality show a sustained declining trend from 82 per 1,000 (1982-1987) to 71 per 1,000 (1987-1992) to 61 per 1,000 (1992-97). The sustained declining trend is evidence of a real decline in infant mortality during the fifteen-year period. Further evidence of a decline is provided by the estimates of *child mortality* between the period 1982-87 and

---

[1]For example, see the neonatal and infant mortality rates for Hungary (1955), Italy (1952), Puerto Rico (1952) and Singapore (1953) in the *U.N. Demographic Yearbook, 1961* and for Portugal (1968) in the *U.N. Demographic Yearbook, 1974.*

1992-97. During this period, child mortality declined from 19 to 12 per 1,000; a decline of 37 percent. While these statistics are evidence of improving mortality conditions, because of sampling variability the precise extent of the improvements may differ from the percentages shown.[2]

8.3   Infant Mortality Rates from the Ministry of Health

The Kyrgyz Republic has a long history of demographic and health data collection—primarily through the use of registration systems which are national in coverage. In the case of births and infant deaths, the Ministry of Health is responsible for data collection which is accomplished when reports of local level health officials are forwarded up the reporting hierarchy to the *oblast* level and to the Ministry. Official government statistics on infant mortality are published in the annual statistical reports of the MOH and in the annual statistical reports of the State Committee on Statistics and Analysis (Goskomstat).[3]

The Ministry's system for collecting data on vital events follows protocols which were established during the period of the former Soviet Union. Those protocols define live birth differently from the definitions of the United Nations that were used in the KRDHS (see above). According to those protocols, a pregnancy terminating at a gestation age of less than 28 weeks (i.e., weighing less than 1000 grams or measuring less than 35 centimeters) is considered premature and is classified as a late miscarriage even if signs of life are present at the time of delivery. Only if a premature birth survives for seven days is the child classified as a live birth. A pregnancy terminating at 28 or more weeks of gestation is considered a live birth if the child breaths and as a stillbirth if breathing is not evident at the time of delivery. Thus, some events classified as late miscarriages in the Ministry's statistical system would be classified as live births and infant deaths, according to the definitions used in the KRDHS.

Table 8.2 shows infant mortality rates based on the Ministry's data for the years 1983 through 1996. The rates show a persistent declining trend throughout the period, starting at about 40 per 1,000 in the early 1980s and declining to 26 per 1,000 in 1996. This time trend is similar to that displayed by the rates estimated from the KRDHS. Thus, the estimates from both the KRDHS and the Ministry document a substantial decline in infant mortality; 25 percent over the period from 1982-87 to 1992-97 according to the KRDHS and 28 percent over the period from 1983-87 to 1993-96 according to the Ministry's estimates. This is strong evidence of improvements in infant survivorship in recent years in the Kyrgyz Republic.

It should be noted that the rates from the survey are much higher than the Ministry's rates. For example, the KRDHS estimate of 61 per 1,000 for the period 1992-97 is twice the Ministry's estimate of 29 per 1,000 for 1993-96. Certainly, one factor leading to this difference are the differences in the definitions of a live birth and infant death in the KRDHS survey and

Table 8.2 Trends in Infant Mortality	
Infant mortality rates reported by the Ministry of Health, Kyrgyz Republic 1983-96	
Year	IMR
1996	25.9
1995	28.1
1994	29.1
1993	31.9
1992	31.5
1991	29.7
1990	30.0
1989	32.2
1988	36.8
1987	37.7
1986	38.2
1985	41.9
1984	40.9
1983	40.1
Mean 1993-96	28.8
Mean 1988-92	32.0
Mean 1983-87	39.7
Sources: Ministry of Health, Kyrgyz Republic	

---

[2] The mortality rates for the KRDHS are based on data provided by a sample of 3,848 women and are subject to sampling variability. Of interest here is the 95-percent confidence interval for the estimated rates. For example, the estimated infant mortality rate for 1992-97 (61 per 1,000 live births) has a very broad 95-percent confidence interval (47 to 76 per 1,000) (see Appendix B). Thus, the point estimate of 61 per 1,000 cannot be considered exact and the true rate could be higher or lower.

[3] It is worth noting that the rates published by the MOH are shown at the national level and separately for the capital city of Bishkek and the six *oblasts* of the Kyrgyz Republic.

in the Ministry's protocols. A thorough assessment of the difference between the two estimates would need to take into consideration the sampling variability of the survey's estimate. However, given the magnitude of the difference, it is likely that it arises from a combination of definitional differences and methodological differences between the survey and Ministry's registration systems.

8.4   Socioeconomic Differentials in Childhood Mortality

Differentials in infant and child mortality by urban-rural residence, mother's education and mother's ethnic group are shown in Table 8.3 and Figure 8.1. The estimated mortality rates for each subgroup of the population are for the ten-year period preceding the survey. A ten-year period is used when calculating the rates for population subgroups in order to reduce the sampling variability of the estimates.

Figure 8.1
Under-Five Mortality by
Selected Characteristics

KRDHS 1997
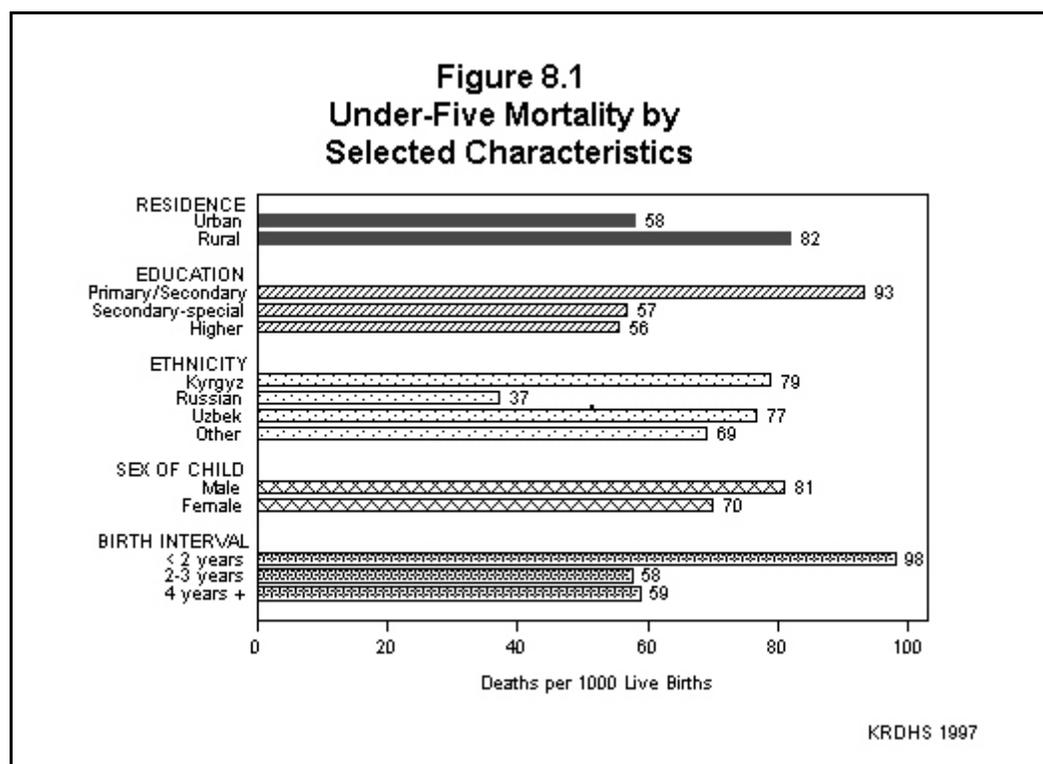
The rates for residence display a pattern which is expected and which agrees with the pattern found in most countries of the world. The mortality estimates for urban areas are lower at all ages than the estimates for rural areas. In terms of infant mortality, the estimate for rural areas exceeds the urban estimate by 30 percent (70 versus 54 per 1,000). In terms of under-five mortality, the rural estimate exceeds the urban estimate by 41 percent (82 versus 58 per 1,000).

Mortality estimates for children by education of mother display the expected differentials. There is a substantial difference between the infant mortality estimates for women with a primary/secondary education (82 per 1,000) and women with either a secondary-special or higher education (50 and 48 per 1,000, respectively). The educational differential is also found in child mortality (mortality in the age range one to five) so that the overall under-five mortality rate for children born to women with a primary/secondary education (93 per 1,000) is substantially higher than the rates for children born to women with either a secondary-special or higher education (57 and 56 per 1,000, respectively).

Pronounced mortality differentials are also found by the ethnicity of a child's mother. Infant mortality rates are substantially lower for children born to women of Russian ethnicity (27 per 1,000) than to children born to women of Kyrgyz (70 per 1,000), Uzbek (67 per 1,000) or other ethnicity (61 per 1,000). The differentials in mortality rates by ethnicity are more pronounced than those by residence or mother's education.

Table 8.3 Infant and child mortality by background characteristics

Infant and child mortality rates for the ten-year period preceding the survey, by selected socioeconomic characteristics, Kyrgyz Republic 1997

Background characteristic	Neonatal mortality (NN)	Postneonatal mortality (PNN)	**Infant mortality** $(_1q_0)$	Child mortality $(_4q_1)$	**Under-five mortality** $(_5q_0)$
Residence					
Urban	29.4	25.0	54.3	4.0	58.2
Rural	34.4	36.0	70.4	12.7	82.2
Education					
Primary/Secondary	38.7	42.9	81.7	12.7	93.4
Secondary-special	30.5	19.5	50.1	7.3	57.0
Higher	18.4	29.0	47.5	8.6	55.7
Ethnicity					
Kyrgyz	37.5	32.0	69.5	10.4	79.2
Russian	[19.0]	[8.2]	[27.1]	10.5	[37.3]
Uzbek	24.3	42.8	67.1	10.4	76.8
Other	25.9	34.6	60.5	9.3	69.2
Total	33.1	33.1	66.2	10.3	75.8

Note: Figures in brackets are based on 200-499 births.

8.5   Demographic Differentials in Childhood Mortality

The relationship between early childhood mortality and selected demographic variables is shown in Table 8.4. As was the case with the socioeconomic differentials, the rates are shown for the ten-year period preceding the survey.

As in almost all populations, in the Kyrgyz Republic the infant mortality rate for male children (72 per 1,000) exceeds the rate for female children (60 per 1,000). However there is little difference in the child mortality rates for male (10 per 1,000) and female children (11 per 1,000).

The relationship between childhood mortality and birth order indicates that first births and births of order 4 and higher are at greater than average risk of mortality.

A clear association is indicated between mortality risk and the length of the preceding birth interval. Births which occur after a short birth interval are at greater risk of mortality than births occurring after longer intervals. The risk of infant mortality for births following an interval of less than two years (87 per 1,000) is greater than the risk for births following an interval of 2-3 years (48 per 1,000) or an interval of 4 or more years (51 per 1,000). This relationship suggests that some mortality reduction would result if the proportion of births occurring after a birth interval less than 2 years were reduced.

Table 8.4 Infant and child mortality by demographic characteristics

Infant and child mortality rates for the ten-year period preceding the survey, by selected demographic characteristics, Kyrgyz Republic 1997

Demographic characteristic	Neonatal mortality (NN)	Postneonatal mortality (PNN)	**Infant mortality ($_1q_0$)**	Child mortality ($_4q_1$)	**Under-five mortality ($_5q_0$)**
Sex of child					
Male	36.6	35.4	71.9	10.0	81.2
Female	29.6	30.6	60.2	10.6	70.2
Age of mother at birth					
< 20	[53.0]	[45.1]	[98.1]	10.0	[107.2]
20-29	34.2	32.3	66.5	10.4	76.3
30-39	20.9	27.1	48.0	10.8	58.3
Birth order					
1	42.1	30.9	73.0	10.3	82.5
2-3	28.6	35.2	63.8	6.7	70.0
4+	30.6	32.2	62.8	15.5	77.3
Previous birth interval					
< 2 yrs	39.7	47.4	87.1	12.1	98.1
2-3 yrs	22.5	25.4	48.0	10.0	57.5
4+ yrs	24.3	26.3	50.6	8.6	58.8
Total	33.1	33.1	66.2	10.3	75.8

Note: Figures in brackets are based on 200-499 births

8.6   High-Risk Fertility Behavior

Previous research has shown a strong relationship between the fertility patterns of women and their children's risk of mortality (United Nations, 1994). Typically, mortality risks are greater for children who are born to mothers who are too young or too old, who are born after a short birth interval, or who have a high birth order. In this analysis, a mother is classified as too young if she is less than 18 years of age, and as too old if she is over 34 years of age. A short birth interval is defined as a birth occurring within 24 months of the previous birth, and a child is of high birth order if the mother had previously given birth to four or more children.

Table 8.5 shows the distribution of children born in the five years before the survey by risk category. While first births to women aged 18 to 34 are considered an unavoidable risk, they are included in the analysis and are shown as a separate risk category.

Column 1 of Table 8.5 shows, that in the five-year period before the survey, 28 percent of births were in a single high-risk category and 7 percent were in a multiple high-risk category.

Column 2 of the table shows risk ratios for avoidable high-risk births relative to births not having any high-risk characteristics. Overall, the risk ratio for births in a single high-risk category is 1.3 (i.e., elevated by 30 percent over births in the no risk category). For births with multiple high-risk characteristics, the risk ratio is 1.4 (i.e., elevated by 40 percent).

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 mortality, and the percent distribution of currently married women at risk of conceiving a child with an elevated risk of mortality, by category of increased risk, Kyrgyz Republic 1997

Risk category	Births in 5 years preceding the survey		Percentage of currently married women[a]
	Percentage of births	Risk ratio	
Not in any high-risk category	35.4	1.0	29.0[b]
Unavoidable risk category			
First birth between ages 18 and 34	29.8	1.4	6.0
Single high-risk category			
Mother's age < 18	1.3	1.2	0.1
Mother's age > 34	1.9	0.0	16.4
Birth interval < 24 months	17.4	1.5	13.8
Birth order > 4	7.0	1.3	5.6
Subtotal	27.5	1.3	35.8
Multiple high-risk category			
Age >34 & birth interval <24 mo.	0.2	0.0	0.2
Age >34 & birth order >4	4.4	0.9	24.9
Age >34 & birth interval <24 & birth order >4	0.2	0.0	1.7
Birth interval <24 & birth order >4	2.7	2.3	2.3
Subtotal	7.4	1.4	29.1
In any avoidable high-risk category	34.9	1.3	65.0
Total	100.0	-	100.0
Number of births	2,026	-	2,675

Note: Risk ratio is the ratio of the proportion dead of births in a specific high-risk category to the proportion dead of births not in any high-risk category.
[a] Women were assigned to risk categories according to the status they would have at the birth of a child, if the child were conceived at the time of the survey: age less than 17 years and 3 months, age older than 34 years and 2 months, latest birth less than 15 months ago, and latest birth of order 4 or higher.
[b] Includes sterilized women

Column 3 of Table 8.5 looks to the future and addresses the question of how many currently married women have the potential for having a high-risk birth. The results were obtained by simulating the risk category into which a birth to a currently married woman would fall if she were to become pregnant at the time of the survey. For example, a woman who was 37 years old at the time of the survey and had four previous births—the last of which occurred three years earlier—would be classified in the multiple high-risk category of being too old (35 or older) and at risk of having a high-order birth (greater than 4).

Overall, 65 percent of currently married women had the potential to give birth to a child with an elevated risk of mortality. Twenty-nine percent of women had the potential to give birth to a child with multiple high-risk factors.

CHAPTER 9

MATERNAL AND CHILD HEALTH

Talaibek S. Builashev, Jumabubu A. Doskeeva, Janar B. Botbaeva and Abdumanap A. Muratov

This chapter presents findings concerning maternal and child health in the Kyrgyz Republic. Information is presented on maternal care during pregnancy and delivery, vaccinations of children and child illnesses (respiratory infection, fever and diarrhea) in the two weeks preceding the survey. Data on maternal care were obtained for all live births in the three years prior to the survey, while data on child vaccinations and illnesses were obtained for surviving children.

9.1   Antenatal Care

KRDHS interviewers recorded all medical personnel that a woman reported having seen for antenatal care for each live birth in the three years preceding the survey. For the purpose of presenting results, antenatal care is classified in terms of the provider with the highest medical qualifications.

Table 9.1 and Figure 9.1 show the percentage of births for which mothers received antenatal care. A very high proportion of mothers receive care from professional health providers (97 percent); the majority receive care from a doctor (65 percent), and a significant proportion receive care from a nurse or midwife (32 percent). Only 3 percent of women report receiving no antenatal care.

Differences in antenatal care between age groups of women are negligible. Mothers are more apt to receive care from a doctor for first births (67 percent) than for births of order four and higher (59 percent).

Significant differences in the source of antenatal care are found for mothers classified by urban/rural residence and by region. The percentage of mothers who receive care from a doctor is greater in urban (92 percent) than in rural areas (58 percent), and greater in Bishkek City (98 percent) and North Region (92 percent) than in East and South Regions (60 and 50 percent, respectively).

Mother's education and ethnicity are also associated with antenatal care. Ninety-nine percent of women of Russian ethnicity received antenatal care from a doctor compared with 64 percent and 55 percent of women of Kyrgyz and Uzbek ethnicity, respectively. Eighty-four percent of women with higher education received antenatal care, while only 68 percent of women with primary education and 59 percent of women with secondary-special education received antenatal care.

Antenatal care is most beneficial when it is sought early in pregnancy and is continued throughout a pregnancy. The first visit to the women's consulting center should occur in the first three months of pregnancy so that a timely assessment of each woman's health can be made and appropriate procedures can be employed for the management of the pregnancy.

Table 9.2 shows information on the timing and number of visits made to health providers during pregnancy for live births in the three years preceding the survey. By the start of the third month of pregnancy, 27 percent of women have made their first antenatal visit and by the start of the sixth month of pregnancy, 94 percent have made a visit. The median duration of pregnancy for the first antenatal visit is 3.5 months.

Table 9.1 Antenatal care

Percent distribution of births in the three years preceding the survey by source of antenatal care during pregnancy, according to selected background characteristics, Kyrgyz Republic 1997

| Background characteristic | Antenatal care provider[1] | | | Total | Number of births |
	Doctor	Nurse/ Trained midwife	No one		
Mother's age at birth					
< 20	62.4	34.1	3.5	100.0	152
20-34	65.4	32.1	2.3	100.0	933
35+	70.8	26.2	3.0	100.0	88
Birth order					
1	67.0	30.2	2.8	100.0	343
2-3	67.8	29.9	2.3	100.0	545
4+	59.0	38.0	2.5	100.0	284
Residence					
Urban	91.9	6.2	1.3	100.0	265
Rural	57.7	39.5	2.8	100.0	907
Region					
Bishkek City	97.9	0.7	1.4	100.0	81
North	91.8	5.4	2.4	100.0	330
East	60.2	38.4	1.4	100.0	78
South	49.4	47.8	2.8	100.0	683
Mother's education					
Primary/Secondary	59.4	37.0	3.3	100.0	615
Secondary-special	67.9	30.3	1.8	100.0	414
Higher	84.2	15.0	0.8	100.0	143
Ethnicity					
Kyrgyz	64.0	33.1	2.7	100.0	772
Russian	98.9	1.1	0.0	100.0	51
Uzbek	54.6	44.2	1.2	100.0	261
Other	90.5	3.5	6.0	100.0	89
All births	65.4	31.9	2.5	100.0	1,172

Note: Figures are for births in the period 0-35 months preceding the survey.
[1] If the respondent mentioned more than one provider, only the most qualified provider is considered.

Table 9.2 also indicates that 81 percent of women make four or more antenatal care visits. The median number of antenatal care visits is 8. It is clear that in the Kyrgyz Republic, antenatal care is received early in pregnancy and, for most women, is continued throughout pregnancy.

9.2 Assistance and Medical Care at Delivery

Hygienic conditions during delivery and supervision of delivery by trained medical staff reduce the risk of infections and ensure that complications of delivery are effectively handled. The KRDHS collected information on the place of delivery for all children born in the three years preceding the survey and the type of medical staff assisting during delivery.

Figure 9.1
Percent Distribution of Births by
Antenatal Care and Delivery Characteristics

ANTENATAL CARE
Doctor — 65.4
Nurse/Trained midwife — 31.9
No one — 2.5
PLACE OF DELIVERY
Delivery hospital — 94.8
Hospital — 0.7
Doctor's assistant/Midwife post — 0.3
Respondent's home — 3.2
Other home — 0.6
ASSISTANCE DURING DELIVERY
Doctor — 60.8
Nurse/Trained midwife — 37.3
Other — 1.0
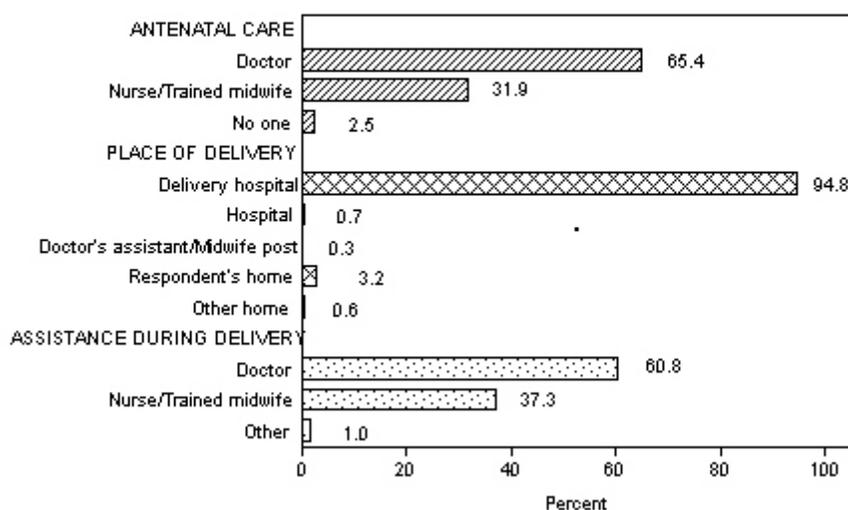
Percent

Note: Based on births in the three years preceding the survey.

KRDHS 1997

Table 9.3 indicates that virtually all births are delivered at health facilities (96 percent). The great majority of births occur in a delivery hospital (95 percent) and another 1 percent occur in either a general hospital or a FAP (doctor's assistant/midwife post). Only 4 percent of births are reported as occurring outside the setting of a health facility (i.e., primarily at the respondent's home). The high proportion of births delivered in delivery hospitals leaves little potential for differentials in place of delivery by age groups. Table 9.3 indicates that the percentage of births delivered in a hospital setting is 90 percent or higher for almost all population groups.

Table 9.4 indicates that almost all births are delivered under the supervision of persons with medical training—61 percent by a doctor and 37 percent by a nurse or trained midwife.

While virtually all births are delivered by trained medical staff, there are differences in the percentage of deliveries assisted by a doctor and, alternatively, by a nurse or midwife by residence and region. Relatively more deliveries are attended by doctors in urban areas (77 percent) than in rural areas (56 percent), and more deliveries are attended by a doctor in Bishkek City (91 percent) and North and East Regions (86 and 75 percent, respectively) than in South Region (43 percent).

The likelihood of delivery under a doctor's supervision is greater for women of Russian ethnicity (88 percent) than for Kyrgyz and Uzbek women (58 percent each).

Table 9.2 Number of antenatal care visits and stage of pregnancy

Percent distribution of live births in the three years preceding the survey by number of antenatal care visits, and by the stage of pregnancy at the time of the first visit, Kyrgyz Republic 1997

Characteristic	Percent
Number of visits	
0	2.5
1	1.3
2-3	5.5
4+	81.1
Don't know/missing	9.6
Total	100.0
Median	8.3
Number of months pregnant at time of first visit	
No antenatal care	2.5
<3 months	27.0
3-5 months	66.7
6+ months	3.5
Don't know/missing	0.4
Total	100.0
Median	3.5
Number of births	1,172

Note: Figures are for births in the period 0-35 months preceding the survey.

103

Table 9.3 Place of delivery

Percent distribution of births in the three years preceding the survey by place of delivery, according to selected background characteristics, Kyrgyz Republic 1997

| Background characteristic | Place of delivery | | | | | | | Number of births |
	Delivery hospital	Hospital	Doctor's assistant/ midwife post	Respond-ent's home	Other home	Other	Total	
Mother's age at birth								
< 20	93.9	0.0	0.0	4.3	0.0	1.8	100.0	152
20-34	95.3	0.9	0.2	2.6	0.8	0.2	100.0	933
35+	90.2	0.0	1.8	8.0	0.0	0.0	100.0	88
Birth order								
1	97.3	0.5	0.0	1.7	0.6	0.0	100.0	343
2-3	94.3	1.0	0.3	3.5	0.5	0.5	100.0	545
4+	92.7	0.5	0.5	4.7	0.9	0.5	100.0	284
Residence								
Urban	97.6	0.0	0.0	0.5	0.8	1.0	100.0	265
Rural	93.9	0.9	0.3	4.0	0.6	0.2	100.0	907
Region								
Bishkek City								
North	99.3	0.0	0.0	0.0	0.0	0.7	100.0	81
East	97.2	0.7	0.0	1.4	0.7	0.0	100.0	330
South	97.1	0.0	0.0	2.9	0.0	0.0	100.0	78
	92.8	0.9	0.5	4.5	0.8	0.5	100.0	683
Mother's education								
Primary/Secondary	93.7	0.7	0.3	3.8	0.8	0.7	100.0	615
Secondary-special	95.6	1.0	0.4	2.3	0.6	0.0	100.0	414
Higher	96.8	0.0	0.0	3.2	0.0	0.0	100.0	143
Ethnicity								
Kyrgyz	93.4	1.1	0.4	4.3	0.5	0.3	100.0	772
Russian	97.8	0.0	0.0	0.0	2.2	0.0	100.0	51
Uzbek	98.0	0.0	0.0	0.6	0.8	0.6	100.0	261
Other	95.9	0.0	0.0	3.5	0.0	0.7	100.0	89
Antenatal care visits								
None	78.8	0.0	0.0	21.2	0.0	0.0	100.0	29
1-3 visits	81.3	3.9	1.9	11.4	1.4	0.0	100.0	80
4 or more visits	96.1	0.6	0.2	2.1	0.7	0.4	100.0	951
Don't know/Missing	97.2	0.0	0.0	2.2	0.0	0.5	100.0	112
All births	94.8	0.7	0.3	3.2	0.6	0.4	100.0	1,172

Note: Figures are for births in the period 0-35 months preceding the survey.

9.3 Characteristics of Delivery

Respondents were asked in the KRDHS if their babies were delivered by caesarean section. Respondents were also asked if their children were weighed at the time of birth and, if so, how much each baby weighed. In addition, mothers were asked for their subjective assessment of their baby's size at birth (very large, larger than average, average size, smaller than average, or very small).

Table 9.5 indicates that according to mothers' reports, 6 percent of births in the three years before the KRDHS were delivered by caesarean section. Delivery by caesarean section is more common among

births to older women, women residing in urban areas, more educated women, and women of Russian ethnicity. However, the most pronounced differential in the prevalence of caesarean section delivery is associated with region. The rate of caesarean section is several times higher among births in Bishkek City (13 percent), North Region (14 percent) than among births in East and South Regions (2 and 3 percent, respectively).

Table 9.4 Assistance during delivery

Percent distribution of births in the three years preceding the survey by reported provider during delivery, according to selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Attendant assisting during delivery[1]						Total	Number of births
	Doctor	Nurse/ Trained midwife	Birth attendant	Relative/ Other	No one	Don't know/ Missing		
Mother's age at birth								
< 20	53.1	44.5	0.0	0.0	1.0	1.4	100.0	152
20-34	62.0	36.6	0.3	0.6	0.3	0.2	100.0	933
35+	61.4	33.3	1.8	1.8	0.0	1.8	100.0	88
Birth order								
1	67.5	32.2	0.0	0.3	0.0	0.0	100.0	343
2-3	61.9	36.6	0.3	0.3	0.3	0.7	100.0	545
4+	50.6	45.0	1.0	1.6	1.1	0.6	100.0	284
Residence								
Urban	77.0	22.2	0.5	0.0	0.0	0.2	100.0	265
Rural	56.0	41.8	0.3	0.8	0.5	0.5	100.0	907
Region								
Bishkek City	91.4	7.9	0.0	0.0	0.0	0.7	100.0	81
North	86.2	13.0	0.4	0.3	0.0	0.0	100.0	330
East	74.7	24.9	0.0	0.0	0.0	0.4	100.0	78
South	43.2	54.0	0.5	0.9	0.7	0.7	100.0	683
Mother's education								
Primary/Secondary	54.8	42.9	0.2	0.9	0.5	0.6	100.0	615
Secondary-special	63.7	34.8	0.4	0.4	0.4	0.4	100.0	414
Higher	78.0	21.0	1.1	0.0	0.0	0.0	100.0	143
Ethnicity								
Kyrgyz	57.7	40.1	0.6	0.7	0.2	0.6	100.0	772
Russian	87.7	12.3	0.0	0.0	0.0	0.0	100.0	51
Uzbek	57.9	40.9	0.0	0.0	1.2	0.0	100.0	261
Other	80.2	17.3	0.0	1.7	0.0	0.7	100.0	89
Antenatal care visits								
None	36.0	53.4	0.0	10.6	0.0	0.0	100.0	29
1-3 visits	52.1	42.1	1.9	0.0	1.9	1.9	100.0	80
4 or more visits	59.3	39.5	0.2	0.3	0.3	0.4	100.0	951
DK/Missing	85.7	11.6	1.3	1.0	0.0	0.5	100.0	112
Total	60.8	37.3	0.4	0.6	0.4	0.5	100.0	1,172

Note: Figures are for births in the period 0-35 months preceding the survey.
[1] If the respondent mentioned more than one attendant, only the most qualified attendant is considered.

Mothers who reported that their baby was weighed at birth were able to report the birth weight for 97 percent of all births in the last three years. As Table 9.5 indicates, 6 percent of births have a weight of less than 2.5 kilograms, which is classified as low birth weight and is considered to have a higher than average risk of early infant mortality.

Table 9.5 Delivery characteristics: caesarean section, birth weight and size

Among births in the three years preceding the survey, the percentage of deliveries by caesarean section, and the percent distribution by birth weight and the mother's estimate of baby's size at birth, according to selected background characteristics, Kyrgyz Republic 1997

| Background characteristic | Delivery by C-section | Birth weight | | | | Size of child at birth | | | | | Number of births |
		Less than 2.5 kg	2.5 kg or more	Don't know	Total	Very small	Smaller than average	Average or larger	Don't know	Total	
Age											
<20	5.5	11.8	83.9	4.3	100.0	8.4	16.0	74.5	1.0	100.0	152
20-34	5.7	4.6	93.8	1.6	100.0	2.3	9.5	87.8	0.3	100.0	933
35+	10.0	6.6	83.6	9.8	100.0	4.8	7.2	84.1	3.9	100.0	88
Birth order											
1	7.8	9.2	88.0	2.8	100.0	6.1	13.5	80.0	0.5	100.0	343
2-3	5.2	3.6	94.3	2.1	100.0	1.4	10.0	88.0	0.6	100.0	545
4+	5.2	5.4	91.2	3.4	100.0	3.6	6.6	88.8	1.0	100.0	284
Residence											
Urban	7.2	6.0	92.5	1.5	100.0	3.0	7.7	89.4	0.0	100.0	265
Rural	5.6	5.6	91.5	2.9	100.0	3.4	10.9	84.8	0.9	100.0	907
Region											
Bishkek City	12.9	7.1	92.1	0.7	100.0	3.6	13.6	82.9	0.0	100.0	81
North	13.6	7.2	92.0	0.8	100.0	2.9	10.8	86.0	0.3	100.0	330
East	2.9	9.0	88.5	2.5	100.0	1.5	7.2	90.6	0.7	100.0	78
South	1.8	4.3	91.9	3.7	100.0	3.7	9.9	85.5	0.9	100.0	683
Mother's education											
Primary/Secondary	5.2	5.6	90.5	3.9	100.0	3.9	10.5	84.4	1.2	100.0	615
Secondary-special	4.1	4.5	94.3	1.2	100.0	2.0	9.3	88.7	0.1	100.0	414
Higher	15.0	9.3	89.6	1.1	100.0	4.6	11.6	83.8	0.0	100.0	143
Ethnicity											
Kyrgyz	6.9	7.5	89.9	2.6	100.0	3.8	10.9	84.5	0.8	100.0	772
Russian	9.5	2.2	97.8	0.0	100.0	0.0	12.1	87.9	0.0	100.0	51
Uzbek	1.2	2.8	94.6	2.6	100.0	3.6	9.4	86.4	0.6	100.0	261
Other	10.1	0.0	95.9	4.1	100.0	0.0	5.6	94.4	0.0	100.0	89
Total	6.0	5.7	91.7	2.6		3.3	10.2	85.8	0.7		1,172

Note: Figures are for births in the period 0-35 months preceding the survey. Figures may not add to 100.0 due to rounding.

According to the mother's subjective evaluation of birth size, 3 percent of children are reported as very small at birth and another 10 percent are smaller than average.

9.4 Vaccinations

According to guidelines developed by the World Health Organization, by the age of 12 months a child should have received a BCG vaccination to protect against tuberculosis, three doses of DPT to protect against diphtheria, pertussis and tetanus, three doses of the polio vaccine, and a measles vaccination.

The child vaccination schedule in the Kyrgyz Republic requires that BCG and oral polio vaccines are first given in the delivery hospital during the first 3-4 days of life. Revaccinations with oral polio vaccine are usually done at 2, 3.5, 5, 16, and 18 months and at age 6-7 years. The vaccination schedule for diphtheria, pertussis and tetanus toxoid (DPT) is similar to the schedule for the polio vaccination, except that the first DPT vaccine is given at the age of 2 months. Measles vaccinations are given at 12 months and 6-7 years of age (Steinglass, 1995).

Vaccination coverage is controlled throughout childhood by several mechanisms. During the first two years of life, the patronage nurse is responsible for maintaining vaccination records and ensuring that the child receives vaccinations at the appropriate times. After the two-year period, the vaccination schedule may still be under the control of the staff of the pediatric departments of polyclinics or the records can be transferred to a day care center if the child attends one. In the latter case, vaccination is coordinated by the day care nurse. Finally, when the child starts to attend primary school at age seven, the school nurse becomes responsible for the child's vaccinations.

Information on vaccination coverage was collected in the KRDHS for all children under three years of age. In the Kyrgyz Republic, child health cards are maintained in the local health care facilities rather than in the homes of respondents, so it was decided to collect the vaccination data in two ways—first from respondents while administering the individual woman's questionnaires, and second from the health cards maintained at the health facilities.

The data collected in the Women's Questionnaire were almost entirely based on mother's recall, since health cards were available in only 24 homes (less than 2 percent). Data were collected on whether or not a child had received specific vaccines, such as BCG, polio, DPT or DT (against diphtheria and tetanus without the pertussis vaccine component), and measles. For children reported to have received polio and DPT/DT, mothers were asked the number of doses received.

The vaccination data from the health cards were collected by the supervisors of the interviewing teams who visited the health care facilities and, who with the help of facility personnel (i.e., a nurse or archive clerk), searched for the child health cards. Cards were found for 82 percent of children reported as under three years of age in the Women's Questionnaire. The team supervisors recorded the vaccination data for each child on forms designed for that purpose.

Table 9.6 presents vaccination coverage rates 1) for the data obtained on the Women's Questionnaire (i.e., based on mother's recall) and 2) for the data obtained from the cards at the health facilities. Vaccination coverage with BCG, first doses of polio and DPT/DT, and measles vaccines was found to be similarly high, on the basis of both the mother's verbal reports and the records from the health facilities. However, mothers reported much lower coverage with the second and third doses of polio and DPT/DT vaccines compared with what was recorded in the health cards. Because of the high dropout rate between the first and third doses of polio and DPT/DT vaccines, according to the mother's report, the percentage of children who had received all WHO-recommended vaccinations was only 22 percent, while according to the health cards, 82 percent of the children were fully immunized.

Table 9.6 Vaccinations by source of information

Percentage of all children age 12-23 months who have received specific vaccinations by the time of the survey, by whether the information was from a vaccination card or from the mother's report, Kyrgyz Republic 1997

| Source of information | Percentage of children who received: | | | | | | | | | Number of children | |
	BCG	P1	P2	P3	D1	D2	D3	Mea-sles	ALL	Weighted	Un-weighted
Mother's recall	98.6	94.6	59.3	44.1	95.6	47.4	36.1	84.6	21.9	373	371
Health cards	98.5	99.8	97.6	94.8	99.8	97.5	95.3	85.4	82.2	289	275

Because the mother's report of vaccination coverage is an unreliable source of information compared to the health card, in the remainder of this report, vaccination data are presented based exclusively on health cards found in the health facilities.

Table 9.7 and Figure 9.2 show rates of vaccination coverage for children 12-23 months of age (i.e., children who should be fully vaccinated). BCG vaccination is usually given in delivery hospitals soon after delivery and is found to be nearly universal (99 percent). Eighty four percent of children have received the initial dose of polio vaccine (in the hospital). Almost all children (100 percent) have received first doses of polio and DPT/DT. Coverage for the second dose of polio and DPT/DT was also very high (98 percent). The third doses of polio and DPT/DT were received by 95 percent of children. This represents a dropout rate of only 5 percent for both the polio and DPT/DT vaccinations. Eighty-five percent of children have received measles vaccine. Because of the high coverage with BCG, measles and individual doses of polio and DPT/DT vaccinations, the percentage of children 12 - 23 months of age who had received all WHO-recommended vaccinations was high, 82 percent.

Table 9.7 Vaccinations by background characteristics

Percentage of all children age 12-23 months who have received specific vaccinations by the time of the survey (according to the health card maintained at the health facilities) by background characteristics, Kyrgyz Republic 1997

Background characteristic	Percentage of children who received:										Number of children	
	BCG	P0	P1	P2	P3	D1	D2	D3	Mea-sles	ALL[a]	Weighted	Un-weighted
Sex												
Male	98.6	83.9	100.0	96.8	96.1	100.0	97.0	93.8	85.6	82.2	153	145
Female	98.4	83.3	99.6	98.4	93.4	99.6	98.0	96.9	85.1	82.1	135	130
Residence												
Urban	98.1	89.2	99.1	99.1	99.1	99.1	98.1	97.2	86.7	84.8	62	61
Rural	98.6	82.1	100.0	97.1	93.7	100.0	97.3	94.7	85.0	81.5	227	214
Region												
Bishkek City	*	*	*	*	*	*	*	*	*	*	13	22
North	100.0	95.0	100.0	100.0	98.3	100.0	100.0	98.3	83.1	83.1	67	59
East	100.0	97.5	100.0	98.7	96.2	100.0	100.0	100.0	78.7	77.5	22	80
South	98.3	76.6	100.0	96.7	93.3	100.0	96.7	94.2	86.9	82.8	186	114
Education												
Prim/Secondary	99.6	82.2	100.0	96.9	94.7	100.0	96.9	94.5	85.1	82.7	150	138
Secondary-spec.	97.9	82.6	100.0	99.7	96.4	100.0	99.4	97.9	88.6	84.7	101	98
Higher	95.9	91.8	98.5	94.3	91.4	98.5	94.3	91.4	77.5	73.4	38	39
Ethnicity												
Kyrgyz	99.2	84.6	99.7	97.2	94.7	99.7	97.3	95.7	85.1	82.3	196	209
Russian	*	*	*	*	*	*	*	*	*	*	10	12
Uzbek	97.8	78.7	100.0	97.8	93.4	100.0	97.8	93.4	83.9	79.5	71	43
Other	*	*	*	*	*	*	*	*	*	*	12	11
Total	98.5	83.6	99.8	97.6	94.8	99.8	97.5	95.3	85.4	82.2	289	275

[a] ALL = BCG, Polio 1-3, DPT/DT 1-3, Measles. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

**Figure 9.2
Vaccination Coverage Among Children Age 12-23 Months**

Note: Based on health cards.

KRDHS 1997
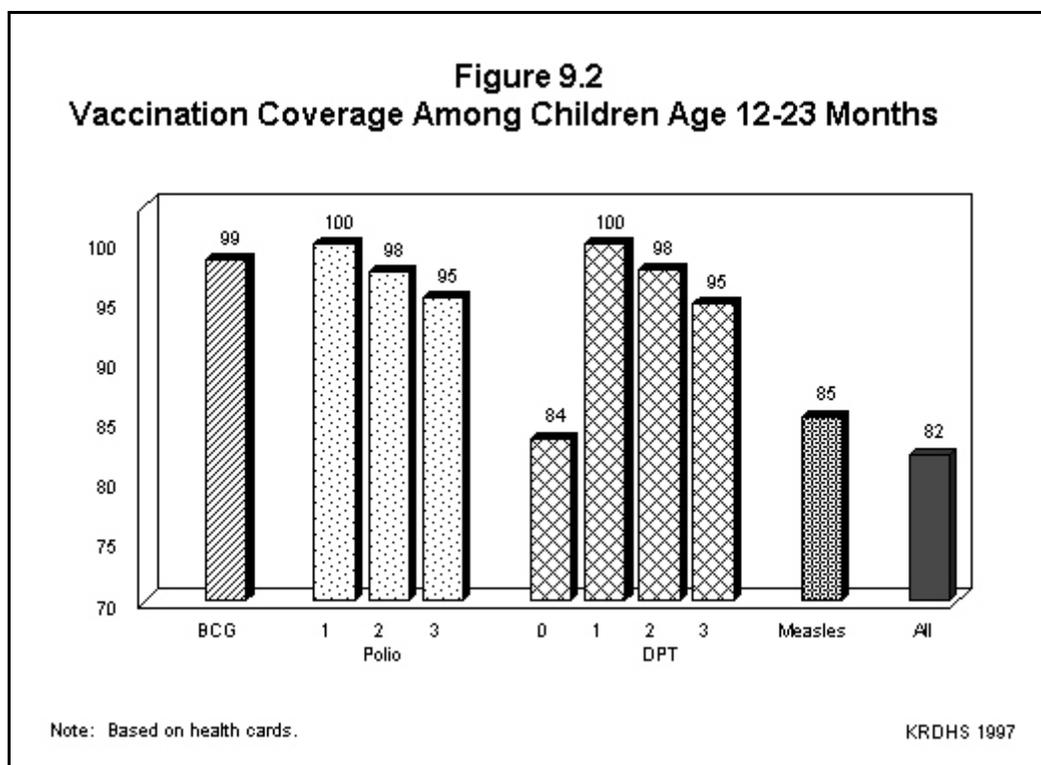
9.5   Acute Respiratory Infection

Acute respiratory infection (ARI) is a primary cause of morbidity among children and a leading cause of infant mortality throughout the world. In the Kyrgyz Republic approximately half of all infant deaths are attributed to ARI (National Statistical Committee, 1997)

In the KRDHS, mothers were asked if their children under three years of age had been ill with a cough accompanied by short, rapid breathing in the two weeks preceding the survey. These symptoms are compatible with ARI. It should be noted that the morbidity data collected in the KRDHS are subjective in the sense that they are based on the mother's perception of illness without validation by medical personnel. Also, the data apply to the period from August to November, while the peak prevalence of ARI is in mid-winter.

Table 9.8 and Figure 9.3 indicate that 4 percent of children under three years of age were ill with a cough accompanied by short, rapid breathing in the two weeks preceding the survey.

Differentials in ARI also exist according to age and sex of child, birth order, area of residence, education, and ethnicity. For example, the prevalence of ARI among children age 6-11 months was about 3 times as high as for children of other age groups. As for residence the prevalence of ARI was the highest among children living in rural areas and in the South. Whether these differentials in illness prevalence reflect genuine differences in morbidity or are due to differences in perceptions of illness cannot be ascertained from these data.

9.6   Fever

Table 9.8 also shows that 13 percent of children had an episode of fever during the two weeks prior to the survey. Differentials in the prevalence of fever are most pronounced by region with boys living in

Bishkek City and North and South Regions being more likely to have had a fever than children living in East Region.

Table 9.8 Prevalence of acute respiratory infection and fever

Percentage of children under three years who were ill with a cough accompanied by short, rapid breathing (acute respiratory infection) during the two weeks preceding the survey, and the percentage of children with fever during the two weeks preceding the survey, by selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Percentage of children with:		
	Cough and rapid breathing	Fever	Number of children
Child's age			
< 6 months	2.2	8.4	191
6-11 months	10.7	16.0	175
12-23 months	3.6	17.7	373
24-35 months	3.3	9.4	365
Sex			
Male	4.7	16.3	555
Female	4.1	9.8	549
Birth order			
1	5.1	11.9	317
2-3	4.2	15.8	513
4+	3.7	9.3	274
Residence			
Urban	2.5	14.5	253
Rural	5.0	12.6	851
Region			
Bishkek City	1.5	12.4	80
North	2.5	11.5	308
East	1.4	6.7	75
South	6.0	14.7	641
Education			
Primary/Secondary	3.7	11.3	574
Secondary-special	5.9	14.9	393
Higher	2.9	15.3	137
Ethnicity			
Kyrgyz	3.9	12.4	720
Russian	4.0	15.9	49
Uzbek	5.7	12.7	253
Other	4.6	18.2	82
All children	4.4	13.1	1,104

Note: Figures are for children born in the period 0-35 months preceding the survey.

Figure 9.3
Prevalence of Respiratory Illness and Diarrhea
in the Last Two Weeks by Age of the Child

KRDHS 1997
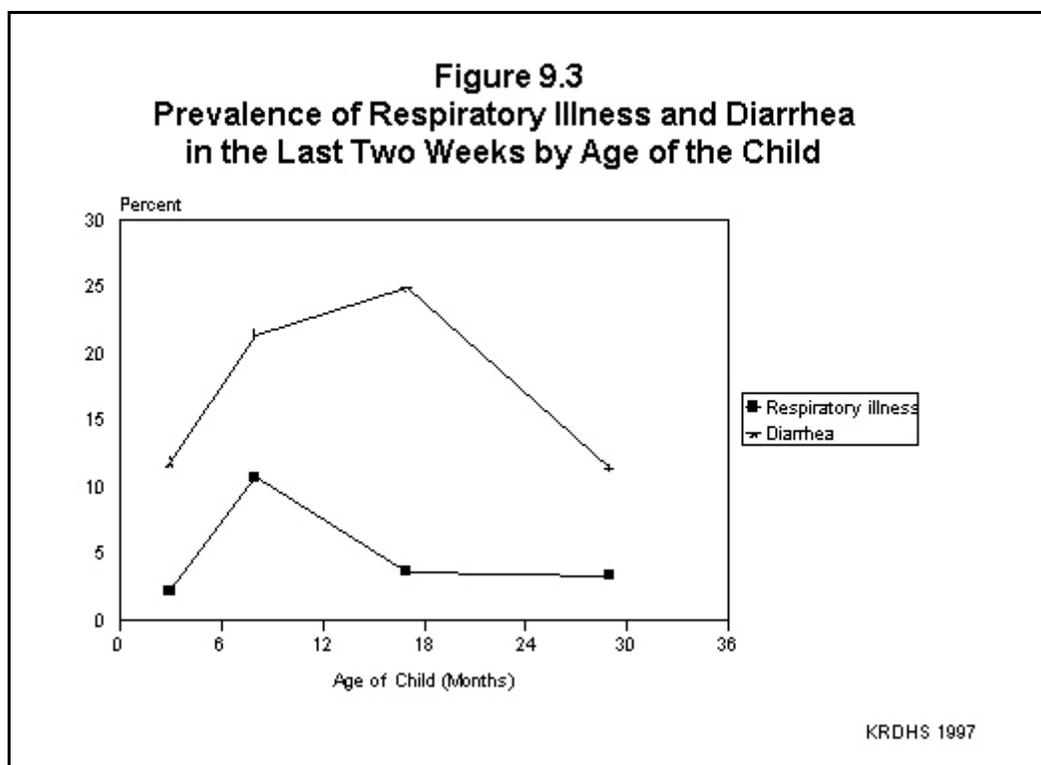
9.7   Diarrhea

Dehydration caused by severe diarrhea is a major cause of morbidity among young children. In the Kyrgyz Republic, 8 percent of all infant deaths are attributed to diarrhea (National Statistical Committee, 1997).

A prompt increase in a child's fluid intake is a simple and effective procedure to prevent diarrhea from developing into a life-threatening illness. Increased fluid intake should be administered in the form of a sugar, salt, and water solution, i.e., oral rehydration therapy (ORT). A product called Rehydron is widely available throughout the Kyrgyz Republic for use in ORT.

All women who had a birth in the last three years were asked some basic questions about the care which should be given to a child with diarrhea—namely, if the intake of liquids and solid foods should be increased and if they had ever heard of Rehydron as a treatment for diarrhea. Table 9.9 indicates that most women had heard of Rehydron (89 percent). However, a significant proportion of women indicated that it is appropriate to reduce the amount of liquid offered to a child with diarrhea (15 percent).

Mothers were also asked whether their children had had an episode of diarrhea in the last two weeks and, if so, whether there was blood in the stools. The results of these questions are presented in Table 9.10.

Table 9.10 and Figure 9.3 indicate that 18 percent of children under three had experienced diarrhea and that 0.6 percent had had blood with the diarrhea. The age pattern of diarrhea shows a broad peak extending from early infancy (under 6 months) through late infancy and age one (6-23 months). These are the ages when a child begins to crawl and walk, and therefore experiences more exposure to the environment. The prevalence of diarrhea among children under 6 months of age is 12 percent; prevalence increases to a peak among children age 12-23 months (25 percent) and declines at 24-35 months of age (11 percent).

111

Table 9.9 Knowledge of diarrhea care

Percentage of mothers with births in the last three years who know about Rehydron for treatment of diarrhea and the percent distribution by knowledge of appropriate feeding during diarrhea, according to background characteristics, Kyrgyz Republic 1997

| | | Quantities that should be given during diarrhea | | | | | | | | | | |
| | | Liquids | | | | | Solid foods | | | | | |
Background characteristic	Percent who know Rehydron	Less	Same	More	Don't know/ Missing	Total	Less	Same	More	Don't know/ Missing	Total	Number of mothers
Age												
15-19	65.9	27.8	18.3	43.5	10.4	100.0	50.6	34.4	0.6	14.4	100.0	47
20-24	87.3	18.1	10.5	60.1	11.4	100.0	68.7	22.6	2.3	6.3	100.0	356
25-29	90.2	13.1	11.4	69.4	6.1	100.0	76.8	17.2	1.3	4.6	100.0	263
30-34	93.6	12.1	6.7	78.7	2.5	100.0	75.6	18.5	3.7	2.1	100.0	236
35+	88.1	9.9	6.9	82.9	0.2	100.0	82.1	15.1	1.1	1.7	100.0	122
Residence												
Urban	89.7	10.3	6.2	76.7	6.8	100.0	74.3	20.0	1.4	4.3	100.0	236
Rural	88.3	16.2	10.8	66.3	6.6	100.0	72.8	19.9	2.4	4.9	100.0	788
Region												
Bishkek City	85.9	5.5	10.2	78.9	5.5	100.0	68.7	23.4	0.8	7.0	100.0	74
North	81.8	9.0	9.1	72.3	9.6	100.0	73.2	17.8	2.3	6.7	100.0	290
East	91.2	4.6	10.1	82.7	2.6	100.0	71.3	23.2	2.9	2.6	100.0	67
South	92.0	20.1	10.0	64.1	5.8	100.0	73.9	20.2	2.2	3.8	100.0	593
Mother's education												
Primary/Secondary	87.1	19.5	10.8	62.5	7.3	100.0	73.0	20.1	1.6	5.2	100.0	535
Secondary-special	89.3	11.0	8.2	75.7	5.1	100.0	75.8	18.6	2.5	3.1	100.0	362
Higher	93.2	6.5	10.2	75.0	8.3	100.0	66.2	23.0	3.3	7.5	100.0	128
Ethnicity												
Kyrgyz	89.7	12.6	10.9	71.1	5.4	100.0	74.5	19.1	1.8	4.6	100.0	666
Russian	74.1	8.2	12.5	66.7	12.7	100.0	66.8	28.0	2.9	2.3	100.0	48
Uzbek	90.0	23.2	7.3	60.7	8.8	100.0	73.2	20.4	1.6	4.8	100.0	231
Other	84.3	13.9	6.1	73.0	6.9	100.0	65.3	20.7	6.6	7.4	100.0	81
All mothers	88.6	14.9	9.8	68.7	6.6	100.0	73.1	19.9	2.2	4.7	100.0	1,025

Table 9.10 also indicates that region is associated with the most pronounced differentials in diarrhea. Children in North Region are most likely to have diarrhea (25 percent), while children in South, East Regions and Bishkek City are less likely to have diarrhea (from 13 to 15 percent).

Table 9.11 shows the treatment received by children who had diarrhea in the last two weeks. Thirty-seven percent of children with diarrhea were taken to a health facility or health provider for treatment. In terms of other treatments, 40 percent of children received Rehydron and 11 percent received a homemade sugar-salt-water solution, so that 44 percent received some type of ORT. Overall, increased fluids were used to treat 64 percent of children with diarrhea.

Table 9.12 summarizes the feeding practices which mothers followed when their children had diarrhea. Eighty-seven percent of children were given fluids in either the same or increased amounts, and only 13 percent were given reduced amounts of fluids.

Table 9.10 Prevalence of diarrhea

Percentage of children under three years who had diarrhea and diarrhea with blood in the two weeks preceding the survey, by selected background characteristics, Kyrgyz Republic 1997

| Background characteristic | Diarrhea in the preceding 2 weeks | | Number of children |
	All diarrhea	Diarrhea with blood	
Child's age			
< 6 months	11.8	0.0	191
6-11 months	21.4	0.6	175
12-23 months	24.9	1.1	373
24-35 months	11.3	0.3	365
Sex			
Male	19.5	0.9	555
Female	15.6	0.3	549
Birth order			
1	18.6	0.0	317
2-3	17.1	0.7	513
4+	17.2	1.0	274
Residence			
Urban	15.1	0.0	253
Rural	18.3	0.7	851
Region			
Bishkek City	13.1	0.0	80
North	24.7	1.4	308
East	15.2	0.4	75
South	15.0	0.2	641
Mother's education			
Primary/Secondary	17.1	0.7	574
Secondary-special	17.4	0.6	393
Higher	20.2	0.0	137
Ethnicity			
Kyrgyz	18.7	0.7	720
Russian	11.0	0.0	49
Uzbek	13.9	0.0	253
Other	23.2	1.3	82
All children	17.6	0.6	1,104

Note: Figures are for children born in the period 0-35 months preceding the survey.

Table 9.11 Treatment of diarrhea

Among children under three years who had diarrhea in the two weeks preceding the survey, the percentage taken to a health facility or provider for treatment, the percentage who received oral rehydration therapy, the percentage who received increased fluids, and the percentage who received neither oral rehydration therapy nor increased fluids, Kyrgyz Republic 1997

Treatment received	Percentage
Taken to a health facility or provider[1]	37.1
Received oral rehydration therapy	
Rehydron	40.4
Sugar-salt-water solution	11.9
Either	43.9
Received increased fluids	64.2
Neither Rehydron, nor sugar-salt- water solution, nor increased fluids	26.5
Number of children	194

[1] Includes health center, hospital, clinic and private doctor

Table 9.12 Feeding practices during diarrhea

Percent distribution of children under three who had diarrhea in the past two weeks by amount of solid foods given and amount of fluids given, Kyrgyz Republic 1997

Feeding practices	Total
Amount of solid foods	
Same	32.8
Increase	1.2
Decrease	66.0
Amount of fluids	
Same	22.4
Increase	64.2
Decrease	13.4
Total	100.0
Number of children	194

Note: Figures are for children born in the period 0-35 months preceding the survey.

CHAPTER 10

NUTRITION OF WOMEN AND CHILDREN

Duishe K. Kudayarov, Apisa K. Kushbakieva, Kalia K. Toguzbaeva and Talaibek S. Builashev

This chapter covers two topics: infant feeding practices and the nutritional status of women and children. The former is described in terms of breastfeeding practices, supplementary feeding practices, and the use of bottles for supplementary feeding. Nutritional status is reported in terms of the height and weight of women and children.

10.1 Breastfeeding and Supplementation

Infant feeding practices have important influences on both the child and the mother; for example, they determine a child's nutritional status and susceptibility to morbidity. Additionally, breastfeeding affects the health of a woman because of its influence on the return of ovulation following a birth and a woman's risk of another pregnancy.

In the 1997 KRDHS, for each child born in the last three years, mothers were asked if they had breastfed the child and, if so, how long after delivery breastfeeding was initiated. Women were also asked if their children were still breastfeeding and the age at which supplemental feeding began. Finally, for children not currently breastfeeding, the age at which they stopped breastfeeding was obtained.

With these data, it is possible to look at several aspects of breastfeeding. For children born in the last three years, the length of time between delivery and initiation of breastfeeding can be investigated. From the data on current breastfeeding status (i.e., status at the time of the survey), the percentage of children breastfeeding by age can be calculated as well as median durations of breastfeeding.

10.1.1 Initiation of Breastfeeding

Colostrum, which is contained in a mother's breast milk, has been proven to be highly nutritious and to contain the antibodies necessary to protect babies from infection before their immune system is fully mature.

Table 10.1 indicates that breastfeeding is almost universal in the Kyrgyz Republic—95 percent of children born in the three years preceding the survey were breastfed; 41 percent within an hour of delivery and 65 percent within 24 hours of delivery.

There was no significant variation among population subgroups in the percentage of children breastfed. However, there were significant differences in the timing of initiation of breastfeeding. Initiation within an hour of delivery is more likely among women living in the East Region (66 percent) compared with the women living in the North, South Region and Bishkek City (49, 37 and 27 percent, respectively). Some differentials in the initiation of breastfeeding exist by mother's ethnicity. Breastfeeding was less likely within an hour of delivery among Russian and Uzbek women (38 and 36 percent, respectively) compared with the women of Kyrgyz (42 percent) and other ethnic groups (53 percent). This differential was maintained at 24 hours of delivery (60, 59, 67, and 70, respectively).

Table 10.1 Initial breastfeeding

Percentage of children born in the three years preceding the survey who were ever breastfed, and the percentage of last-born children who started breastfeeding within one hour of birth and within one day of birth, by selected background characteristics, Kyrgyz Republic 1997

| Background characteristic | Percentage ever breastfed | Among last-born children, percentage who started breastfeeding: | | Number of children |
		Within 1 hour of birth	Within 1 day of birth[1]	
Sex				
Male	95.2	40.3	66.4	589
Female	95.4	42.2	63.9	583
Residence				
Urban	93.6	35.6	54.2	265
Rural	95.8	42.9	68.3	907
Region				
Bishkek City	94.3	26.5	45.5	81
North	94.3	48.5	75.2	330
East	95.3	65.5	85.7	78
South	95.9	36.8	60.3	683
Mother's education				
Primary/Secondary	95.4	39.5	65.7	615
Secondary-special	95.6	42.6	64.1	414
Higher	94.0	45.1	65.8	143
Ethnicity				
Kyrgyz	95.2	42.0	67.0	772
Russian	90.6	38.4	59.5	51
Uzbek	97.4	36.0	59.2	261
Other	92.5	52.6	69.8	89

[1] Includes children who started breastfeeding within 1 hour of birth.

10.1.2 Age Pattern of Breastfeeding

Research has shown that breast milk contains all nutrients needed by children during first several months of life. Supplementation of breast milk before four months of age is not necessary and is discouraged since early supplementation increases the risk of a child having diarrhea. Early supplementation also reduces a woman's output of breast milk since milk production is influenced by the frequency and intensity of breastfeeding.

Table 10.2 shows information on the breastfeeding status of children by age in months. As can be seen, a high proportion of children are breastfed in the Kyrgyz Republic. At 0-3 months of age, 98 percent of children are breastfed and at 8-11 months 81 percent are still breastfed. This rate falls to 21 percent by 20-23 months, and almost all children have stopped breastfeeding by their third birthday.

Table 10.2 Breastfeeding status

Percent distribution of living children by current breastfeeding status, according to child's current age in months, Kyrgyz Republic 1997

	Percentage of living children who are:					Number of living children
			Breastfeeding and:			
Age in months	Not breast-feeding	Exclusively breast-fed	Plain water only	Supple-ments	Total	
0-3	1.6	31.0	16.7	50.7	100.0	127
4-7	10.9	5.4	3.2	80.5	100.0	122
8-11	19.5	0.0	0.0	80.5	100.0	117
12-15	20.7	0.0	0.0	79.3	100.0	134
16-19	59.2	0.0	0.0	40.8	100.0	112
20-23	79.3	0.0	0.0	20.7	100.0	126
24-27	91.2	0.0	0.0	8.8	100.0	110
28-31	95.1	0.0	0.0	4.9	100.0	125
32-35	93.7	0.0	0.0	6.3	100.0	130
0-3 months	1.6	31.0	16.7	50.7	100.0	127
4-6 months	8.9	7.5	3.2	80.5	100.0	88
7-9 months	17.1	0.0	1.2	81.6	100.0	91

Note: Breastfeeding status refers to preceding 24 hours.   Children classified as *breastfeeding and plain water only* receive no supplements.

However, while breastfeeding is lengthy, supplementary feeding starts early in the Kyrgyz Republic. Exclusive breastfeeding during early infancy, is recommended by the World Health Organization[1]. At ages 0-3 months, 31 percent of children were exclusively breastfed. During these early months of infancy, most breastfed children receive either plain water (17 percent) or other food and liquids (51 percent).

Table 10.3 shows information on the median duration of breastfeeding. For all of the Kyrgyz Republic, the median duration of any breastfeeding is lengthy (16 months) and the duration of exclusive and full breastfeeding (breastfeeding plus plain water) is 2.1 and 2.9 months, respectively.

The most pronounced differentials in breastfeeding are by region, ethnicity and type of place of residence. The median duration of any breastfeeding is longer in the South Region (18 months) than in Bishkek City (12 months). The median duration of any breastfeeding among Kyrgyz and Uzbek women is 17 and 18 months, respectively, while among Russian women and women of other ethnicities, the duration of breastfeeding is shorter (6 and 13 month, respectively). The median duration of any breastfeeding is longer among Rural women compared with urban (17 and 13 months, respectively).

Eighty nine percent of children under six months of age were reported to have been breastfed six or more times in the 24 hours preceding the survey.

---

[1] Exclusive breastfeeding is the practice of feeding with breast milk only. Supplementation with water is discouraged (WHO/UNICEF, 1990).

117

Table 10.3 Median duration and frequency of breastfeeding

Median duration of any breastfeeding, exclusive breastfeeding, and full breastfeeding among children under three years of age, and the percentage of children under 6 months of age who were breastfed six or more times in the 24 hours preceding the interview, according to background characteristics, Kyrgyz Republic 1997

| | Median duration in months[1] | | | Number of children under 3 years of age | Children under 6 months | |
| | | | | | Breastfed 6+ times in preceding 24 hours | Number of children |
Background characteristic	Any breast-feeding	Exclusive breast-feeding	Full breast-feeding[2]			
Sex						
Male	16.5	0.6	1.8	589	85.6	80
Female	17.3	0.7	1.8	583	90.5	111
Residence						
Urban	13.4	1.3	2.5	265	(83.4)	46
Rural	17.2	0.6	1.4	907	90.1	145
Region						
Bishkek City	11.9	1.5	1.9	81	(76.0)	15
North	15.6	1.1	2.3	330	79.6	64
East	14.4	1.1	1.7	78	(90.8)	9
South	17.9	0.6	1.3	683	95.5	103
Education						
Primary/Secondary	17.8	0.6	1.7	615	90.5	91
Secondary-special	16.0	0.6	1.7	414	91.4	67
Higher	10.5	1.4	2.5	143	(77.0)	33
Ethnicity						
Kyrgyz	17.0	0.7	2.2	772	90.4	120
Russian	6.5	1.8	1.9	51	*	12
Uzbek	18.1	0.4	0.5	261	(90.8)	50
Other	12.8	0.7	2.4	89	*	10
Total	16.9	0.7	1.8	1,172	88.5	191
Mean	16.4	2.1	2.9	-	-	-
Prevalence/Incidence[3]	16.1	1.4	2.2	-	-	-

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.
[1] Medians and means are based on current status
[2] Either exclusive breastfeeding or breastfeeding and plain water only
[3] Prevalence-incidence mean

10.1.3 Types of Supplemental Foods

In the KRDHS, mothers were asked about the types of foods that were given to children in the 24 hours preceding the survey. The food given to a child is not mutually exclusive, and as a result, a child could be reported as receiving several types of food.

Table 10.4 indicates the types of food given to children according to breastfeeding status. Among children 0-3 months of age who are breastfeeding, infant formula is commonly used to supplement breast milk (10 percent) as well as powdered and evaporated milk (13 percent). Tea, especially popular in the Kyrgyz Republic, was given in the last 24 hours to 34 percent of infants 0-3 months of age.

Meat, poultry, fish, and eggs contain protein and other nutrients important for the physical and mental development of young children. Seventeen percent of breastfeeding infants at age 4-7 months receive these food. Fruits and vegetables are also commonly given to infants who are breastfeeding; 33 percent of infants 4-7 months of age were given this food in the 24 hours before the survey interview.

Among non-breastfeeding children, a high proportion at all ages receive milk. Also, more than 70 percent of children after the first birthday receive high protein food (poultry, fish, meat, or eggs).

10.2   Nutritional Status of Children under Age Three

The data on height and weight of children in the KRDHS permit the evaluation of nutritional status and the identification of subgroups of children that are at increased risk of faltered growth and morbidity.

10.2.1 Measures of Nutritional Status in Childhood

The 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. The distribution of children in such a well-nourished population can be used as a reference for assessing the nutritional status of children in other populations. The reference population recommended by the World Health Organization, which is used in this report, is the NCHS (U.S. National Center for Health Statistics) standard.

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 gives different information about growth and body composition that can be used to assess nutritional status.

Height-for-age is a measure of growth. A child who is below minus two standard deviations (-2 SD) from the median of the NCHS reference population in terms of height-for-age is considered short for his/her age, or *stunted,* a condition reflecting chronic undernutrition. If a child is below minus three standard deviations (-3 SD) from the reference median, the child is considered to be severely stunted.

Weight-for-height describes current nutritional status. A child who is below minus two standard deviations (-2 SD) from the reference median is considered too thin for his/her height, or *wasted,* a condition reflecting an acute or recent nutritional deficit. If a child is below minus three standard deviations (-3 SD) from the reference median, the child is considered severely wasted.

The weight-for-age index does not distinguish between chronic undernutrition (stunting) and acute undernutrition (wasting). A child can be underweight for age because he is stunted, because he is wasted, or because he is both wasted and stunted. Weight-for-age is a good overall indicator of a population's nutritional health.

In a healthy, well-nourished population of children, it is expected that 2.3 percent of children will fall below minus two standard deviations (-2 SD) of the median of the reference population on these nutritional indices (i.e., will be classified as moderately or severely undernourished).

Table 10.4 Types of food received by children in preceding 24 hours

Percentage of children under 36 months of age, by type of food received in the 24 hours before the interview, and the percentage using a bottle with a nipple, according to breastfeeding status and child's age in months, Kyrgyz Republic 1997

Age (in months)	Breast milk only	Infant formula	Powdered/ evapo- rated milk	Fer- mented milk products[1]	Plain water	Juice	Tea	Other liquids	Poultry/ fish/ eggs/ meat	Grain/ flour/ cereal	Tubers/ potatoes	Fruit/ vege- tables	Sweets/ choco- late	Other	Using bottle with a nipple	Number of children
BREASTFEEDING CHILDREN																
0-11	14.0	19.9	33.2	10.1	55.0	7.7	66.3	32.2	19.6	49.4	39.2	33.3	25.2	5.0	22.7	328
0-3	31.5	9.7	12.7	1.1	52.2	5.1	34.4	9.7	0.0	10.5	5.2	3.8	3.0	0.0	25.2	125
4-7	6.0	21.9	46.5	13.4	55.9	6.7	78.8	40.4	16.8	63.1	47.8	33.4	24.7	2.7	27.7	109
8-11	0.0	31.0	45.1	18.2	57.6	12.4	94.1	52.6	48.7	84.9	74.4	72.0	55.0	14.2	13.8	94
12-23	0.0	22.6	50.3	45.4	69.3	9.8	97.6	52.5	64.1	92.0	81.3	83.7	64.8	22.0	8.4	178
Total	8.7	20.9	39.3	22.5	61.3	8.5	78.0	40.4	35.6	65.9	55.4	52.6	41.1	11.4	16.9	530
NON-BREASTFEEDING CHILDREN																
0-11	0.0	56.8	81.4	31.7	76.6	26.7	76.9	36.7	45.4	80.2	55.8	65.6	45.7	7.0	85.2	38
24-29	90.0	12.4	56.8	45.6	79.4	9.2	92.3	53.5	72.4	89.8	81.9	87.4	71.9	26.7	2.3	159
30-35	50.0	18.0	56.7	38.9	77.7	16.0	92.8	62.3	71.4	87.1	84.7	86.8	74.0	33.3	2.7	182
Total	0.0	18.5	60.2	43.4	74.2	14.5	91.3	55.6	69.7	87.2	80.8	84.6	71.6	27.0	13.5	574

NA = Not applicable

120

In the survey, all surviving children born since January 1994 were eligible for height and weight measurement. Of the 1,172 children under three years of age at the time of the survey, plausible values for height and weight were obtained for 1,015 children (87 percent). The most commonly reported reason for not measuring a child was that the child was not at home. The following analysis pertains to the 1,015 children, age 0-35 months, for whom complete and plausible anthropometric data were collected.

10.2.2 Levels of Child Undernutrition in the Kyrgyz Republic

Table 10.5 shows the percentage of children under three years of age classified as undernourished according to demographic characteristics. From all children of the Kyrgyz Republic, 25 percent of children are moderately or severely stunted, 3 percent are moderately or severely wasted, and 11 percent are moderately or severely underweight for age.

Table 10.5 Nutritional status of children by demographic characteristics

Percentage of children 0-35 months of age who are classified as undernourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by demographic characteristics, Kyrgyz Republic 1997

Demographic characteristic	Height-for-age		Weight-for-height		Weight-for-age		Number of children
	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage below -3 SD	Percentage below - 2 SD[1]	
Age							
<6 months	1.8	5.4	0.2	1.9	0.0	0.3	174
6-11 months	4.5	16.2	0.9	4.2	3.7	10.0	165
12-23 months	10.3	34.3	0.9	6.1	2.5	19.3	343
24-35 months	4.6	29.5	0.6	1.1	0.7	8.6	333
Sex							
Male	8.8	28.0	0.9	4.2	2.9	13.4	519
Female	3.2	21.5	0.4	2.6	0.4	8.6	496
Birth order							
1	5.9	21.7	1.2	4.4	1.3	9.8	287
2-3	5.7	23.9	0.4	2.5	1.5	10.2	468
4+	6.9	30.0	0.5	4.1	2.5	13.9	260
Birth interval[2]							
First birth	5.9	21.7	1.2	4.4	1.3	9.7	288
< 24 months	6.8	28.4	0.0	2.4	1.5	12.8	192
24-47 months	7.8	29.2	0.6	3.0	2.7	13.4	333
48+ months	2.6	18.7	0.8	3.8	0.8	7.4	202
Total	6.0	24.8	0.7	3.4	1.7	11.0	1,015

Note: Figures are for children born in the period 0-35 months preceding the survey. Each index is expressed in terms of the number of standard deviation (SD) units from the median of the NCHS/CDC/WHO international reference population. Children are classified as undernourished if their z-scores are below minus two or minus three standard deviations (-2 SD or -3 SD) from the median of the reference population.
[1] Includes children who are below -3 SD
[2] Excludes first births

In terms of demographic characteristics, the most pronounced differentials are found by age and birth interval. Children age 6-23 months are less well nourished than children at early infancy (under 6 months)

by almost all indices of undernutrition. Figure 10.1 shows nutritional differentials by selected demographic variables in terms of the stunting index. Moderate or severe stunting is found in a significant proportion of children 12-23 months of age (34 percent) and of those born within a birth interval of less than 24 months and 24-47 months (29 percent).

Figure 10.1
Prevalence of Stunting by Age of Child
and Length of Birth Interval
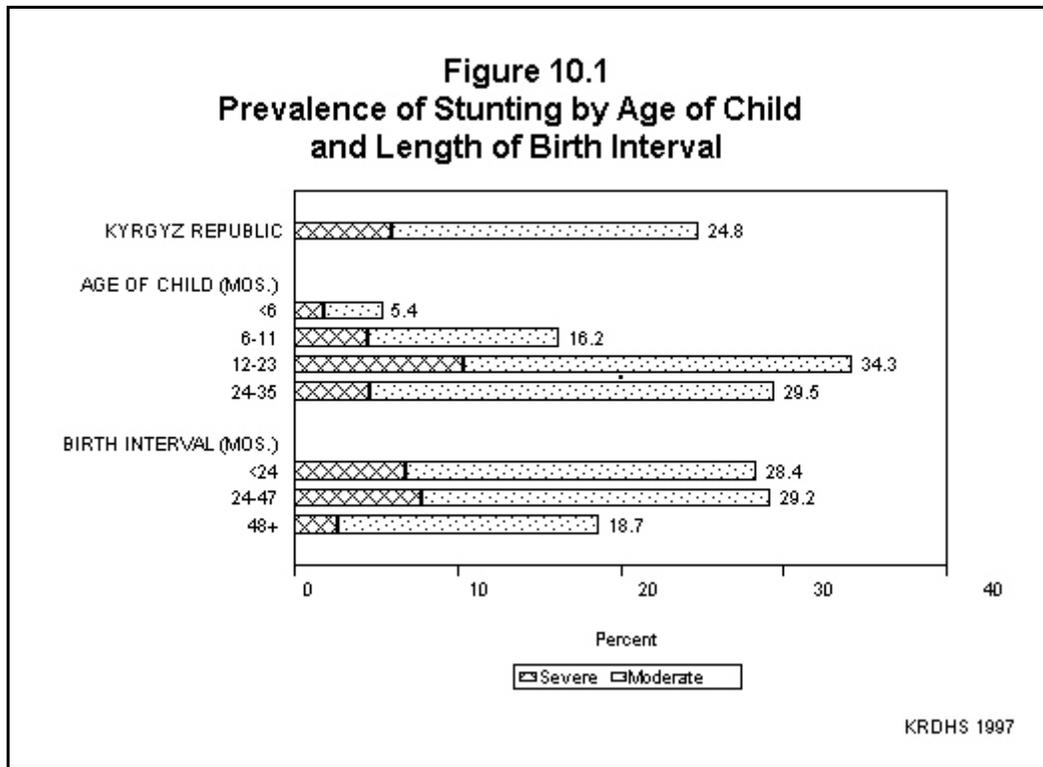
Male children are generally less well nourished than female children. Children born at higher birth order are also less well nourished than children of lower birth order.

Table 10.6 shows nutritional indices by background characteristics. In terms of the stunting index and undernutrition, children in urban areas suffer undernutrition to a lesser extent than children in rural areas. Children in Bishkek City suffer less undernutrition than children in the other regions. Figure 10.2 shows nutritional differentials in terms of the stunting index. Moderate or severe stunting is found in a significant proportion of children in rural areas (34 percent), those living in the East and South Region, (32 and 29 percent, respectively), and those born to women with a primary/secondary education (32 percent).

10.3   Women's Anthropometric Status

In the KRDHS, data were collected on the height and weight of all women 15-49 years of age. Measurements were obtained for 98 percent of surveyed women. Two indices of women's nutritional status are presented in this report: the height of women and the body mass index (BMI)—an indicator combining height and weight data.

Table 10.6 Nutritional status of children by background characteristics

Percentage of children 0-35 months of age who are classified as undernourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, Kyrgyz Republic 1997

Background characteristic	Height-for-age		Weight-for-height		Weight-for-age		
	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage below -3 SD	Percentage below - 2 SD[1]	Number of children
Residence							
Urban	3.8	14.8	0.8	4.3	1.0	5.9	228
Rural	6.7	27.7	0.6	3.2	1.9	12.5	787
Region							
Bishkek City	1.7	10.3	0.0	1.7	0.0	4.3	67
North	4.0	18.0	0.5	2.1	1.3	6.0	282
East	10.7	32.4	1.2	6.6	3.7	12.3	68
South	6.9	28.9	0.8	3.9	1.8	14.0	598
Mother's education							
Primary/Secondary	6.7	32.4	0.7	2.8	2.3	12.7	539
Secondary-special	4.6	15.4	0.5	4.7	0.9	9.5	353
Higher	7.1	18.6	1.3	2.7	1.3	8.4	123
Ethnicity							
Kyrgyz	8.2	28.6	0.5	3.6	1.8	11.7	658
Russian	4.3	4.3	0.6	0.6	0.6	0.6	46
Uzbek	2.2	20.7	1.3	3.5	1.9	13.1	239
Other	0.0	17.8	0.0	3.7	0.0	5.2	72
Total	6.0	24.8	0.7	3.4	1.7	11.0	1,015

Note: Figures are for children born in the period 0-35 months preceding the survey. Each index is expressed in terms of the number of standard deviation (SD) units from the median of the NCHS/CDC/WHO international reference population. Children are classified as undernourished if their z-scores are below minus two or minus three standard deviations (-2 SD or -3 SD) from the median of the reference population.
[1] Includes children who are below -3 SD

Figure 10.2
Prevalence of Stunting by Background Characteristics
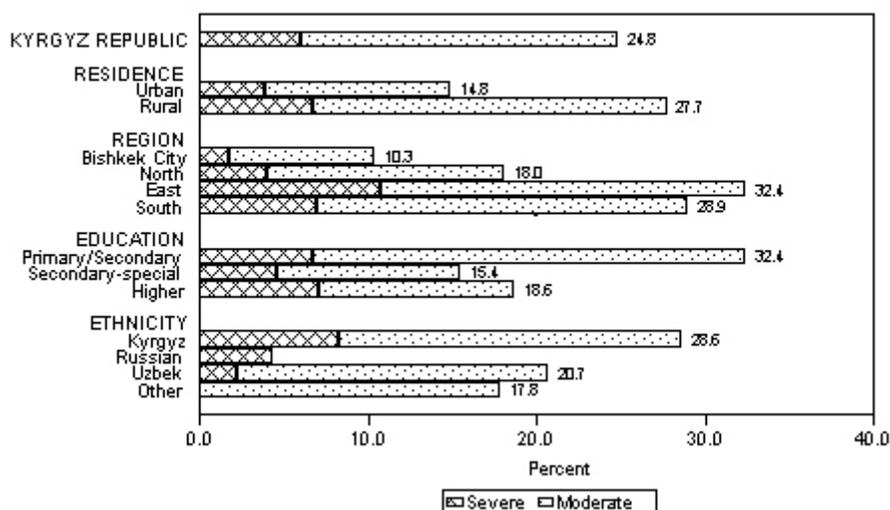
KRDHS 1997

A woman's height is associated with past socioeconomic status and her access to nutritional foods during childhood and adolescence. Maternal height can be used to predict the risk of difficult delivery, since small stature is often associated with small pelvis size. The height below which a woman can be considered at risk is in the range of 140 to 150 centimeters.

Table 10.7 shows the percent distribution of women by height. The mean height of women is 158 cm. One percent of women are under 145 cm in height.[2]

Indices of body mass are used to assess thinness and obesity. The most common is the body mass index (BMI), which is defined as weight in kilograms divided by height squared in meters (kg/m^2). A cutoff point of 18.5 has been recommended for defining energy deficiency among nonpregnant women. Table 10.7 indicates that the mean BMI among nonpregnant women[3] who were weighed and measured is 23.4, with 7 percent having a BMI below 18.5.

Table 10.8 shows mean values and the percent distribution of women for the BMI index by background characteristics. There are significant differentials in the percentage of women with a BMI less than 18.5. Women in the 15-19 age group are more likely to have a low BMI than women in other groups (15 percent and 5-8 percent, respectively).

Table 10.7 Anthropometric indicators of female nutritional status

Percent distribution and mean and standard deviation for all women by height, weight, and body mass index (BMI), Kyrgyz Republic 1997

Indicator	Percent	Percent distribution including missing
Height (cm)		
130.0-134.9	0.0	0.0
135.0-139.9	0.0	0.0
140.0-144.9	0.7	0.7
145.0-149.9	6.7	6.6
150.0-154.9	21.5	21.2
155.0-159.9	35.0	34.4
160.0-164.9	24.7	24.3
165.0-169.9	9.2	9.0
170.0-174.9	1.9	1.8
175.0-179.9	0.3	0.3
Missing	-	1.5
Total		
Mean	157.9	-
Standard deviation	5.7	-
Number of women	3,789	3,848
BMI (kg/m²)		
12.0-15.9	0.4	0.3
16.0-16.9	1.4	1.3
17.0-18.4	5.2	5.1
18.5-20.4	18.4	18.1
20.5-22.9	30.4	29.9
23.0-24.9	16.5	16.2
25.0-26.9	10.2	10.0
27.0-28.9	6.4	6.3
29.0-29.9	2.6	2.6
30.0-31.9	3.8	3.7
32.0-33.9	2.0	1.9
34.0-35.9	1.2	1.2
36.0-37.9	0.7	0.7
38.0-39.9	0.5	0.5
>40.0	0.5	0.5
Missing	-	1.6
Mean	23.4	-
Standard deviation	4.4	-
Number of women	3,518	3,574

Note: The BMI index excludes pregnant women and those who are less than 3 months postpartum.

---

[2] If 150 cm is used as the cutoff, 6 percent of women would be considered at risk.

[3] Pregnant women were excluded from the BMI analyses because precise data on gestational age, which are necessary for adjustments, were not available.

Table 10.8 Nutritional status of women by background characteristics

Mean height and percentage of women shorter than 145 centimeters, mean body mass index (BMI), and percent distribution by BMI, for women age 15-49, by selected background characteristics, Kyrgyz Republic 1997

Background characteristic	Height			Body Mass Index					
	Mean	Percent <145 cm	Number	Mean	Percent distribution			Total	Number
					<18.5	18.5-29.9	≥ 30.0		
Age									
15-19	158.0	0.8	729	21.1	14.8	85.0	0.2	100.0	695
20-24	158.4	0.5	644	22.0	7.8	91.1	1.1	100.0	548
25-29	158.1	1.2	525	22.3	6.5	91.3	2.2	100.0	461
30-34	157.7	1.0	623	23.6	6.2	85.1	8.7	100.0	578
35-49	157.5	0.7	1,268	25.7	2.6	78.5	18.9	100.0	1,236
Residence									
Urban	159.1	0.5	1,260	23.6	7.0	83.9	9.1	100.0	1,191
Rural	157.2	0.9	2,528	23.4	6.9	84.8	8.3	100.0	2,327
Region									
Bishkek City	160.9	0.2	507	23.1	7.1	85.7	7.2	100.0	484
North	157.8	1.2	1,165	23.7	7.3	83.2	9.5	100.0	1,096
East	157.0	1.5	212	22.6	8.3	85.4	6.3	100.0	195
South	157.2	0.6	1,906	23.4	6.5	84.9	8.6	100.0	1,742
Mother's education									
Primary/Secondary	157.1	0.9	2,031	23.3	7.8	83.5	8.7	100.0	1,888
Secondary-special	158.3	0.6	1,134	23.8	5.2	85.4	9.4	100.0	1,049
Higher	159.5	0.6	624	23.4	7.2	86.2	6.6	100.0	580
Ethnicity									
Kyrgyz	157.1	1.1	2,355	23.1	7.0	86.1	7.0	100.0	2,168
Russian	162.3	0.0	395	24.1	6.9	82.2	10.9	100.0	385
Uzbek	157.6	0.3	686	23.9	5.0	83.2	11.7	100.0	625
Other	158.8	0.7	352	23.6	10.2	79.5	10.3	100.0	339
Total	157.9	0.8	3,789	23.4	6.9	84.5	8.6	100.0	3,518

Note: The BMI index excludes pregnant women and those who are less than 3 months postpartum.

CHAPTER 11

ANEMIA

Almaz T. Sharmanov, *Duishe K. Kudayarov and Kalia K. Toguzbaeva*

11.1   Introduction

Anemia is a condition which is characterized by a reduction in the red blood cell volume and a decrease in the concentration of hemoglobin in the blood. Commonly, anemia is the final outcome of a nutritional deficiency of iron, folate, vitamin B_{12} and some other nutrients. Although many other causes of anemia such as hemorrhage, infection, genetic disorders, and chronic disease have been identified, nutritional deficiency, due primarily to a lack of bioavailable dietary iron, accounts for the majority of cases of anemia (INACG, 1979, 1989; DeMaeyer et al., 1989; Hercberg and Galan, 1992; Yip, 1994).

Anemia is known to have detrimental health implications, particularly for mothers and young children. Compared with nonanemic mothers, unfavorable pregnancy outcomes have been reported to be more common in anemic mothers (INACG, 1989). Women with severe anemia can experience difficulty meeting oxygen transport requirements near and at delivery, especially if significant hemorrhaging occurs. This may be an underlying cause of maternal death and antenatal and perinatal infant loss (Fleming, 1987; Omar et al., 1994; Thonneau et al., 1992). Iron-deficiency anemia among children has been demonstrated to be associated with impaired cognitive performance, motor development, coordination, language development and scholastic achievement (Scrimshaw, 1984; Lozoff et al., 1991). Anemia increases morbidity from infectious diseases because several immune mechanisms are adversely affected.

Anemia due to iron deficiency is recognized as a major public health problem throughout the world. According to the epidemiological data collected from multiple countries by the World Health Organization, some 35 percent of women and 43 percent of young children in the world are affected by anemia. In developing countries, about 50 percent of women and young children are anemic. In the U.S. and Europe, the prevalence of anemia is 7 to 12 percent among women and children. The highest overall rates of anemia are reported in southern Asia and certain regions of Africa (DeMaeyer et al., 1989).

Anemia has been considered to be among the leading public health problems in the Kyrgyz Republic for decades. Nevertheless, prior to the KRDHS, no nationally representative data on the prevalence of anemia were available.

11.2   Anemia Measurement Procedures

Testing of women and children for anemia was a major part of the 1997 KRDHS. This was the first anemia study in the Kyrgyz Republic done on a nationally representative sample. The study involved hemoglobin testing for anemia to determine the prevalence and severity of anemia among women and children, and to identify demographic, socioeconomic, nutritional and other risk factors for anemia by residence, region, education, and other subgroups of population. This chapter presents findings of the anemia study.

Anemia testing was done on 3,760 women age 15-49 and 980 of their children age three and under. Prior to participating in the study, each respondent was asked to sign a consent form giving permission for the collection of a blood droplet from her and her children.

For hemoglobin measurement, capillary blood was taken from the finger using Tenderlett lancets (i.e., sterile disposable instruments that allow a relatively painless skin puncture). Hemoglobin was measured in the blood using the Hemocue system that allows the detection of the level of hemoglobin within a minute. This system consists of a battery-operated portable photometer and a disposable cuvette which serves as both a blood collection device and the site where reaction occurs. The procedure was performed by specially trained medical personnel and was determined to be suitable for the field conditions of the survey.

Levels of anemia were classified as severe, moderate, and mild based on the hemoglobin concentration in the blood and according to criteria developed by the World Health Organization (DeMaeyer et al., 1989). Severe anemia was diagnosed when hemoglobin concentration was less than 7.0 g/dl, moderate anemia when hemoglobin concentration was 7.0-9.9 g/dl, and mild anemia when the hemoglobin concentration was 10.0-11.9 g/dl (10-10.9 g/dl for pregnant women and children under age three).

The hemoglobin concentration in the blood is negatively regulated by the level of saturation of arterial blood with oxygen. The decline in the oxygen partial pressure with altitude is accompanied by a decline in the saturation of arterial blood with oxygen and increased concentration of hemoglobin in the blood. Based on these relationships Hurtado et al. developed altitude hemoglobin level adjustments for the CDC Pediatric Nutrition Surveillance System.

The population of the Kyrgyz Republic lives at altitudes ranging from 488 meters (1,600 feet) in the Ferghana Valley to more than 3,000 meters (10,000 feet) in some areas of Narynskaya oblast. High altitude can affect the level of hemoglobin in the blood and, therefore, should be taken into consideration in the calculation of anemia rates. For this reason, in the KRDHS, the anemia rates were calculated using high altitude adjustment equations:

Adjusted level of altitude = observed level – adjustment coefficient

Adjustment coefficient is calculated as follows:

Adjustment coefficient = -0.032 × (altitude) + 0.022 × (altitude²)

Altitude is measured as

[*altitude in meters/1,000*] × *3.3*

11.3 Anemia Prevalence Among Women

Table 11.1 presents anemia rates for women. Thirty-eight percent of the women in the KRDHS survey suffer from some degree of anemia; 9 percent have moderate anemia, and 1 percent have severe anemia.

Among age groups, the highest rate of (combined) moderate and severe anemia was diagnosed among women age 30-34 (14 percent), and the lowest rate among women age 15-19 (7 percent). A high rate of moderate/severe anemia was found among women living in the South (13 percent), while only 6 percent of women in Bishkek City were diagnosed as having moderate or severe anemia.

Women with higher education are less frequently anemic than women with primary or secondary-special education. The rates of moderate and severe anemia are higher among rural women compared with urban women, and among ethnic Kyrgyz and Uzbek women compared with ethnic Russians or women of other ethnic groups.

Table 11.1   Anemia among women

Percentage of women classified as having anemia, by background characteristics, Kyrgyz Republic 1997

	Percentage of women with:			
Background characteristic	Severe anemia[1]	Moderate anemia[2]	Mild anemia[3]	Number measured
Age				
15-19	0.7	5.9	25.2	720
20-24	0.8	8.9	24.3	642
25-29	1.3	7.4	28.4	525
30-34	2.7	11.2	30.1	618
35-39	1.0	10.6	29.9	566
40-44	2.2	10.7	26.1	396
45-49	1.5	11.2	30.4	300
Residence				
Urban	0.6	7.0	24.3	1,250
Rural	1.8	10.2	29.1	2,517
Region				
Bishkek City	0.6	5.0	23.5	500
North	1.4	8.5	26.5	1,157
East	0.5	6.9	22.6	211
South	1.7	10.8	29.8	1,898
Education				
Primary/Secondary	1.0	10.3	27.5	2,018
Secondary-Special	2.3	8.5	28.7	1,128
Higher	1.3	6.5	25.5	621
Ethnicity				
Kyrgyz	1.8	9.8	27.4	2,347
Russian	0.3	3.9	20.3	391
Uzbek	1.1	10.8	34.2	680
Other	0.7	7.1	23.3	349
Total	1.4	9.1	27.5	3,767

[1] Hemoglobin level less than 7g/dl
[2] Hemoglobin level 7 - 9.9 g/dl
[3] Hemoglobin level 10 - 11.9 g/dl (10 - 10.9 g/dl for pregnant women)

When iron deficiency is the main etiologic factor of anemia, population groups with high iron requirements are disproportionately affected and develop anemia more frequently. Negative iron balance due to an imbalance of iron requirements versus iron intake often occurs during pregnancy and growth. For this reason, when iron deficiency is highly prevalent in a population, pregnant women, who provide the fetus with a considerable amount of iron, are at greater risk of developing anemia than nonpregnant women.

Figure 11.1 shows the prevalence of moderate anemia among pregnant, breastfeeding, and nonpregnant, nonbreastfeeding women. Among pregnant women in the Kyrgyz Republic, moderate anemia is almost twice as prevalent than among nonpregnant women (breastfeeding or nonbreastfeeding).

Figure 11.1
Prevalence of Moderate Anemia Among Women Age 15-49
by Pregnancy Status and Breastfeeding Status

KRDHS 1997
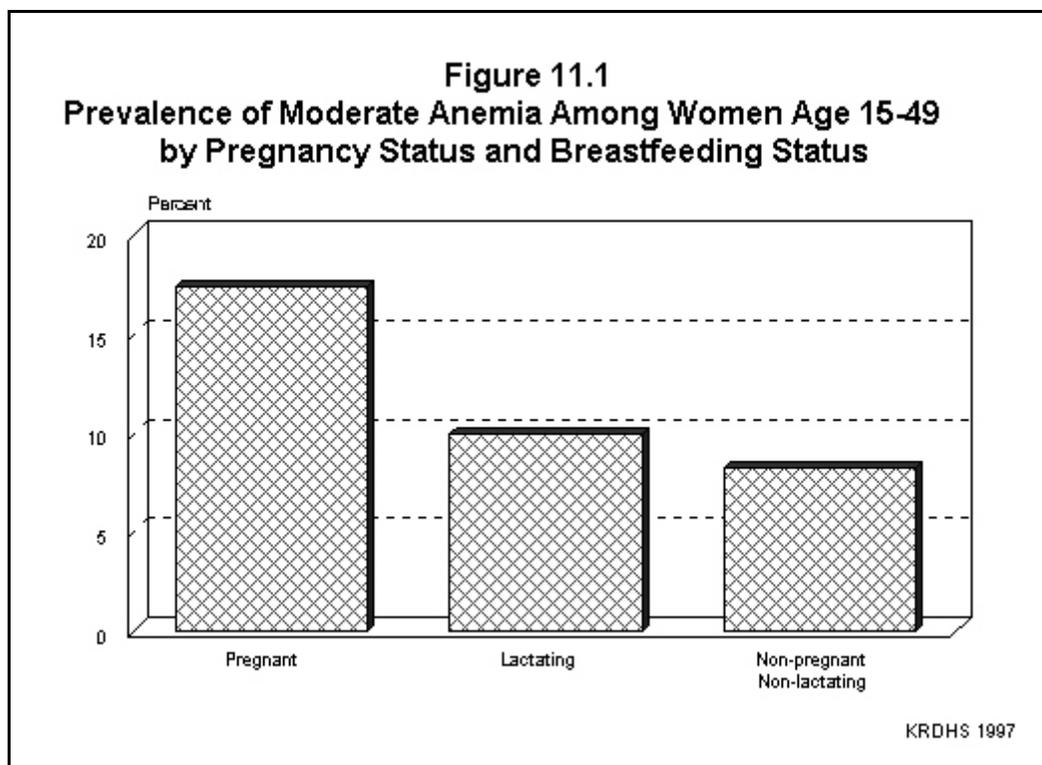
Figure 11.2 illustrates hemoglobin distributions of pregnant women, breastfeeding women, and nonpregnant, nonbreastfeeding women. The entire hemoglobin distribution for pregnant women is shifted downward (to the left) compared with the distribution for nonpregnant women. The hemoglobin distribution for breastfeeding women is also shifted downward compared with the distribution for nonpregnant and nonbreastfeeding women, but to a lesser extent than the distribution for pregnant women.

There is sufficient evidence to suggest that the majority of cases of anemia among women in the Kyrgyz Republic are due to a nutritional deficiency of iron. Testing blood for hemoglobin, which is an iron-containing conjugated protein occurring in red blood cells, can be used as a screening procedure for iron deficiency. However, anemia represents only the severe end of iron deficiency, and the real magnitude of iron deficiency in a population is greater than that reflected by hemoglobin measurement alone. Iron deficiency results primarily from low consumption of food products containing bioavailable iron and promoters of iron absorption, such as animal protein and ascorbic acid.

It has been shown that the mean monthly menstrual blood loss increases from 30 ml for women who are not using contraception to 50 ml for those who rely on the IUD (INACG, 1989). The chronic use of the IUD can lead to iron depletion and iron deficiency anemia (Palomo et al., 1993). Based on the KRDHS data, 28 percent of currently married women in the Kyrgyz Republic are using an IUD. The prevalence of anemia among women according to whether or not the respondent is currently using an IUD as a method of contraception is presented in Figure 11.3. The rates of both severe and moderate anemia among IUD users are higher than among nonusers.

Figure 11.2
Percent Distribution of Women Age 15-49
by Hemoglobin Level

Percent

Hemoglobin (g/dl)

■ Nonpregnant and non-breastfeeding ⇔ Pregnant — Breastfeeding
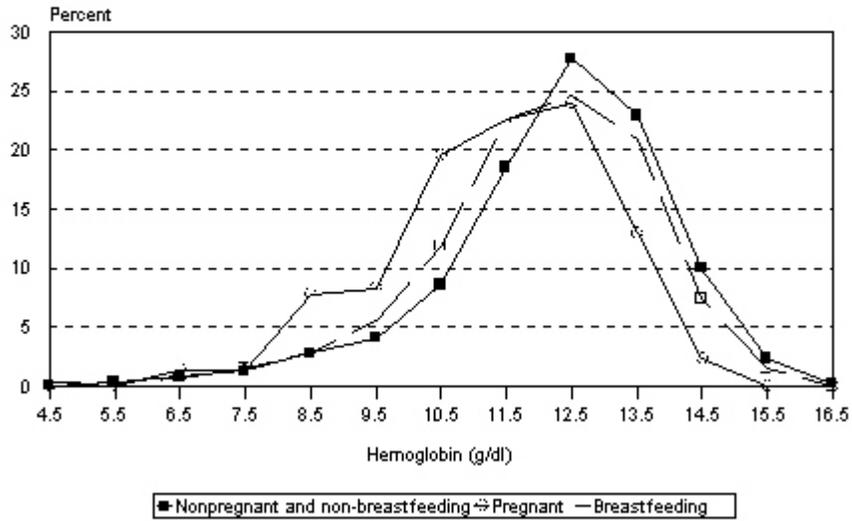
KRDHS 1997

Figure 11.3
Percentage of Women With Moderate
or Severe Anemia by IUD Use

Percent

11

8.2

2

1.3

Severe Anemia

Moderate Anemia

⊠ Using IUD ☐ Not Using IUD

KRDHS 1997

131
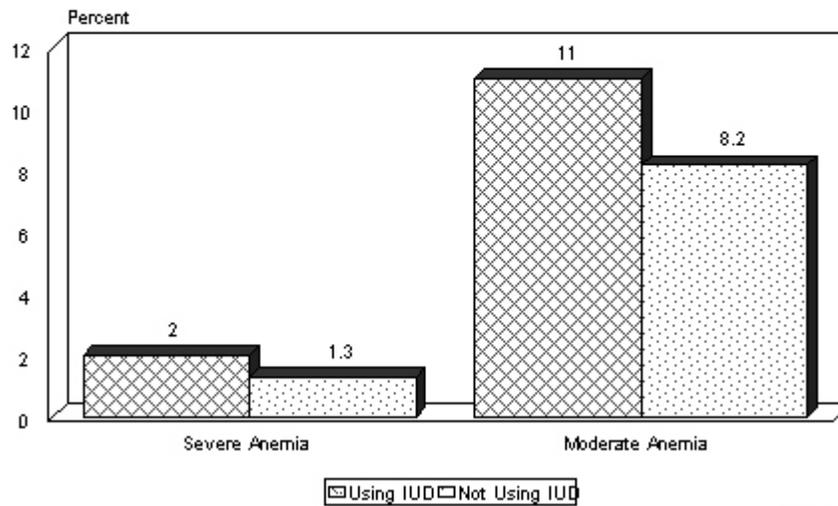
11.4 Anemia Prevalence Among Children

Table 11.2 presents anemia rates for children. Fifty percent of the children under the age of three suffer from some degree of anemia; 24 percent have moderate anemia, and 1 percent are severely anemic.

Table 11.2 Anemia among children

Percentage of children under three years classified as having anemia, by background characteristics, Kyrgyz Republic 1997

Background characteristic	Severe anemia	Moderate anemia	Mild anemia	Number of children
Sex				
Male	2.1	27.8	23.2	511
Female	0.7	20.2	25.7	510
Residence				
Urban	2.2	15.9	20.4	227
Rural	1.2	26.3	25.6	793
Region				
Bishkek City	0.8	12.7	17.8	69
North	2.1	30.0	19.9	284
East	3.6	20.0	24.9	69
South	0.9	22.9	27.3	599
Education of mother				
Primary/Secondary	1.2	25.0	25.1	535
Secondary-special	1.8	24.0	24.4	359
Higher	1.1	19.8	21.8	126
Ethnicity				
Kyrgyz	1.4	25.5	26.0	664
Russian	0.0	22.5	10.8	45
Uzbek	0.9	19.0	25.7	240
Other	3.5	27.4	13.8	71
Total	1.4	24.0	24.4	1,021

[a] Hemoglobin level less than 7g/dl
[b] Hemoglobin level 7 - 9.9 g/dl
[c] Hemoglobin level 10 - 10.9 g/dl

Differences in overall rates of anemia by sex of the child, ethnicity, residence and education of the mother were relatively minor. However, as was the case with women, differences by region are substantial. Thirty-two percent of the children living in the North Region and 24 percent of children living in the South and East Regions were diagnosed as having moderate or severe anemia. In Bishkek City, the prevalence of moderate anemia among children was relatively low (13 percent).

Certain relationships are observed between the prevalence of anemia among mothers and their children. Table 11.3 shows the prevalence of anemia for children according to the anemia status of their mothers. Among children of mothers with moderate anemia, 0.5 percent have severe anemia and 37 percent have moderate anemia. The proportion of moderate anemia among these children is almost twice as high as among children of nonanemic mothers.

Table 11.3 Anemia among children born to anemic mothers

Percent distribution of children under three years by anemia status according to mother's anemia status at the time of the survey, Kyrgyz Republic 1997

Mother's anemia status	Child's anemia status					Number of children
	Severe anemia[1]	Moderate anemia[2]	Mild anemia[3]	Not anemic	Total	
Severe anemia[1]	*	*	*	*	*	14
Moderate anemia[2]	0.5	37.3	27.8	34.4	100	103
Mild anemia[3]	0.9	20.9	29.3	48.8	100	306
Not anemic	1.7	22.2	21.7	54.4	100	596
Total	1.4	24.0	24.5	50.1	100	1,019

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
[1] Hemoglobin level less than 7g/dl
[2] Hemoglobin level 7 - 9.9 g/dl
[3] Hemoglobin level 10 - 11.9 g/dl (10 - 10.9 g/dl for pregnant women and children under age three)

REFERENCES

Cook, J.D., and T.H. Bothwell. 1984. Availability of iron from infant foods. In *Iron nutrition in infancy and childhood,* ed. A. Stekel. New York: Nestlé, Vevey/Raven Press. 119-145.

DeMaeyer, E.M., P. Dallman, J.M. Gurney, L. Hallberg, S.K. Sood, and S.G. Srikantia. 1989. *Preventing and controlling iron deficiency anemia through primary health care.* A guide for Health administrators and program managers. Geneva, Switzerland: World Health Organization.

Fleming, A.F. 1987. Maternal anemia in northern Nigeria: Causes and solutions. *World Health Forum* 8(3): 339-343.

Hercberg, S., and P. Galan. 1992. Nutritional anemias. *Baillièire's Clinical Haematology* 5(1): 143.

Hobcraft, J. and D. Guz. 1991. Breastfeeding and fertility: A comparative analysis. *Population Studies* 45(1): 91-108.

Institute of Obstetrics and Gynecology (IOG), Republic of Uzbekistan, and Macro International Inc. (MI). 1977. *Uzbekistan Demographic and Health Survey 1996.* Calverton, Maryland.

International Nutritional Anemia Consultative Group (INACG). 1979. *Iron deficiency in infancy and childhood.* Geneva, Switzerland: INACG, World Health Organization.

International Nutritional Anemia Consultative Group (INACG). 1989. *Iron deficiency in women.* Geneva, Switzerland: INACG, World Health Organization.

Lozoff, B., E. Jimenez, and A.W. Wolf. 1991. Long-term development outcome of infants with iron deficiency. *New England Journal of Medicine* 325(10): 687-694.

Ministry of Health, Kyrgyz Republic. [various years]. Various titles. Bishkek, Kyrgyz Republic: Statistics Department of the Ministry of Health.

National Institute of Nutrition (NIN), Academy of Preventive Medicine of Kazakhstan, and Macro International Inc. (MI). 1996. *Demographic and Health Survey 1995.* Calverton, Maryland, USA.

National Statistical Committee of the Kyrgyz Republic. [various years]. *Demographic yearbooks* [1989-1997]. Bishkek, Kyrgyz Republic.

Omar, M.M. et al. 1994. Maternal health and child survival in relation to socioeconomic factors. *Gynecological and Obstetrical Investigation* 38: 107-112

Oski, F.A. 1993. Iron deficiency in infancy and childhood. *New England Journal of Medicine* 329(3): 190-193.

Palomo, I., G. Grebe, M. Ferrada, J.M. Carrasco, M. Maffioletti, and E. Felix. 1993. Effects of the prolonged use of intrauterine devices (IUDs) and oral contraceptives on iron nutrition. *Revista Médica de Chile* 121(6): 639-644.

Potts, M., S. Thapa, and M.A. Herbertson. 1985. Breastfeeding and fertility. *Journal of Biosocial Science*, Supplement No. 9.

Russian Centre for Public Opinion and Market Research (RCPOMR) and Centers for Disease Control and Prevention (CDC). 1997. *1996 Russian Women's Reproductive Health Survey: Preliminary report.* Atlanta, Georgia.

Scrimshaw, N.S. 1984. Functional consequences of iron deficiency in human populations. *Journal of Nutritional Science and Vitaminology* 30: 47-63.

Steinglass, Robert. 1995. Report on a MOH (Kazakhstan), WHO (Euro), and USAID (BASICS) Seminar on Child Immunization Policies, practices and Policy Setting in Kazakhstan. Almaty, Kazakhstan, 31 May - 3 June, 1995.

Thonneau, P., B. Toure, P. Cantrelle, T.M. Barry, and E. Papiernik. 1992. Risk factors for maternal mortality: Results of a case-control study conducted in Conakry (Guinea). *International Journal of Gynecology and Obstetrics* 39(2): 87-92.

United Nations. 1962. *1961 Demographic yearbook*. New York: United Nations.

United Nations. 1975. *1974 Demographic yearbook*. New York: United Nations.

United Nations. 1982. *Non-sampling errors in household surveys: Sources, assessment and control.* National Household Survey Capability Programme. New York: United Nations.

United Nations. 1992. *1990 Demographic yearbook*. New York: United Nations.

United Nations. 1995. Kyrgyzstan human development report 1995. Available on the Internet at www.undp.org/undp/rbec/nhdr/kyrgyzstan/

World Bank. 1997. Kyrgyz Republic. Available on the Internet at www.worldbank.org/html/extdr/offrep/eca/kyr2.htm

World Health Organization (WHO) and UNICEF. 1990. Innocenti Declaration on the Protection, Promotion, and Support of Breastfeeding. Adopted at the WHO/UNICEF meeting, Breastfeeding in the 1900s: A Global Initiative, August, Florence, Italy.

Yip, R. 1994. Iron deficiency: Contemporary scientific issues and international programmatic approaches. Symposium: Clinical nutrition in developing countries. *Journal of Nutrition* 124: 1479S-1490S.

APPENDIX A

SAMPLE DESIGN

APPENDIX A

SAMPLE DESIGN

Thanh Lê

A.1 Introduction

The Kyrgyz Republic Demographic and Health Survey (KRDHS) covers the population residing in private households in the country. The design for the KRDHS calls for a representative probability sample of approximately 4,000 completed individual interviews with women between the ages of 15 and 49. It was designed principally to produce reliable estimates of demographic rates (particularly fertility and childhood mortality rates), of maternal and child health indicators, and of contraceptive knowledge and use for the country as a whole, the urban and the rural areas separately, and for four survey regions as follows:

Survey Region 1:   Bishkek City
Survey Region 2:   Issyk-Kulskaya, Chuiskaya and Talasskaya *oblasts*
Survey Region 3:   Narynskaya *oblasts*
Survey Region 4:   Oshskaya and Dzhelal-Abadskaya *oblasts*

A.2 Sampling Frames

In the urban areas, the sampling frame was is the list of therapeutical *uchastoks*[1] collected by the Institute of Obstetrics and Pediatrics. However the list of *uchastoks* only existed for main cities and not for small towns. For small towns, each town had been divided into segments of equal size, around 2 000 population each, and these segments had been treated as if they were *uchastoks*. The actual segmentation of each town, when it fell into the sample, was done in the field. In the rural areas, the sampling frame was the list of villages in the whole country.

A.3 Characteristics of the KRDHS Sample

The sample for the KRDHS was selected in two stages. In the urban areas, the primary sampling units, selected in the first sampling stage, corresponded to the *uchastok*. Large *uchastoks* that were selected into the sample were divided in the field into smaller segments, only one of which was selected for the survey. A complete listing of the households residing in each selected segment was carried out. The lists of households obtained was used as the frame for second-stage sampling, which was the selection of the households to be visited by the KRDHS interviewing teams during the main survey fieldwork. Women between the ages of 15 and 49 were identified in these households and interviewed.

In the rural areas, the first stage sampling units were the villages. Very large villages (with 400 households or more) that had been selected into the sample were divided in the field into smaller segments, and one segment was selected prior to the household listing operation which provided the household lists for the second-stage selection of households.

---

[1]Each city is divided into therapeutic *uchastoks*, each of which is the responsibility of one physician. People living in the *uchastok* would go to a designated health center for service. This is where the physician in charge is located and maintains a map of the *uchastok*.

A.4   Sample Allocation

Tables A.1 and A.2 show the distribution of the population in the Kyrgyz Republic in the different survey regions, as of January 1997, according to the National Statistical Committee.

Table A.1 Population of the Kyrgyz Republic, by urban-rural residence, 1997

Survey region	Urban	Rural	Total
Bishkek City	596,200	3,100	599,300
Survey Region 2	335,200	1,053,000	1,388,200
Survey Region 3	55,800	207,300	263,100
Survey Region 4	581,100	1,742,400	2,323,500
Kyrgyz Republic	1,568,300	3,005,800	4,574,100

Table A.2 Percent distribution of the population, by urban-rural residence, 1997

Survey region	Urban	Rural	Total
Bishkek City	99.5	0.5	13.1
Survey Region 2	24.1	75.9	30.3
Survey Region 3	21.2	78.8	5.8
Survey Region 4	25.0	75.0	50.8
Kyrgyz Republic	34.3	65.7	100.0

Table A.3 Proportional sample allocation by urban-rural residence

Survey region	Urban	Rural	Total
Bishkek City	521	3	524
Survey Region 2	293	921	1,214
Survey Region 3	49	181	230
Survey Region 4	508	1,524	2,032
Kyrgyz Republic	1,371	2,629	4,000

The survey regions, stratified by urban and rural areas, were the sampling strata. There were thus 7 strata with Bishkek City constituting an entire urban stratum as it had been decided that the minuscule rural population of Bishkek would be included in the city as well. A proportional allocation of the target number of 4,000 women to the 7 strata would yield the following sample distribution in Table A.3:

The proportional allocation above would result in a completely self-weighting sample but would not allow for reliable estimates for two of the four survey regions: Bishkek (Survey Region 1) and Naryn

(Survey Region 3). Results of other demographic and health surveys show that a minimum sample of 800-1,000 women is required in order to obtain estimates of fertility and childhood mortality rates at an acceptable level of sampling errors. Given that the total sample size for the KRDHS could not be increased to achieve the required level of sampling errors, it was decided to divide the sample to the four regions as shown in Table A.4. Within each region, it was distributed approximately proportionally to the urban and the rural areas.

Table A.4 Proposed sample allocation by urban-rural residence

Survey region	Urban	Rural	Total
Bishkek City	1 000	-	1,000
Survey Region 2	241	759	1,000
Survey Region 3	170	630	800
Survey Region 4	300	900	1,200
Kyrgyz Republic	1, 711	2,289	4,000

The number of sample points (or clusters) to be selected for each stratum was calculated by dividing the number of women in the stratum by the average take in the cluster. Each cluster corresponds to a segment of an *uchastok*, a village or a segment of a village. Analytical studies of surveys of the same nature suggest that the optimum number of women to be interviewed is around 20-25 in each urban cluster and 30-35 in each rural cluster. If on average 20 women were to be interviewed in each urban cluster and 30 women in each rural cluster, the distribution of sample points would be as shown in Table A.5.

Table A.5 Number of sample points by urban-rural residence

Survey region	Urban	Rural	Total
Bishkek City	50	-	50
Survey Region 2	12	25	37
Survey Region 3	9	21	30
Survey Region 4	15	30	45
Kyrgyz Republic	86	76	162

While examining these figures, it was noticed that because of rounding errors, the number of clusters in Survey Region 2 would yield a slightly smaller number of women than expected. The number of clusters were then rearranged in each stratum so that (1) it was an even number, but in such a way that (2) the regional sample size would not fall short of the proposed size in Table A.5. The even number of clusters is recommended for the purpose of calculating sampling errors in which the first step is to form pairs of homogeneous clusters.

Table A.6 Proposed number of sample points by urban-rural residence

Survey region	Urban	Rural	Total
Bishkek City	50	-	50
Survey Region 2	12	26	38
Survey Region 3	10	20	30
Survey Region 4	14	30	44
Kyrgyz Republic	86	76	162

Table A.7 shows the estimated number of women with completed interviews in the selected clusters.

Table A.7 Expected number of women by urban-rural residence

Survey region	Urban	Rural	Total
Bishkek City	1 ,000	-	1,000
Survey Region 2	240	780	1,020
Survey Region 3	200	600	800
Survey Region 4	280	900	1,180
Kyrgyz Republic	1 ,720	2,280	4,000

The number of households to be selected for each stratum was calculated as follows:

$$Number\ of\ HHs = \frac{Number\ of\ women\ 15\text{-}49}{Number\ of\ women\ 15\text{-}49\ per\ HH\ \times\ Overall\ response\ rate}$$

The estimated number of women 15-49 per household according to the 1989 census is shown in Table A.8.

Table A.8 Estimated average number of women age 15-49 per household by urban-rural residence

Survey region	Urban	Rural	Total
Bishkek City	1.0	1.0	1.0
Survey Region 2	1.1	1.1	1.1
Survey Region 3	1.4	1.3	1.3
Survey Region 4	1.3	1.3	1.3
Kyrgyz Republic	1.1	1.2	1.2

The overall response rate was assumed to be 90 percent (95 percent for households and 95 percent for women), which is the average overall response rate found in other surveys implemented in the Central Asian Republics. Using these two parameters in the above equation, we would expect to select approximately 3,800 households in order to yield the target sample of women. The average number of households to be selected in each cluster is shown in Table A.9 for the different strata.

A.5   Stratification and Systematic Selection of *Uchastoks* and Villages

In the urban areas, stratification of the uchastoks was geographic. Within each sampling stratum, the *oblasts*, then cities and towns were ordered geographically, and the *uchastoks* were selected with probabilities proportional to size, the size being the estimated population in the *uchastoks* (the *uchastok* population reported in the list of *uchastoks* is the population of adults, 15 years and older, which represents about 69.5 percent of the total population residing in the urban areas).

Within each stratum, the selection procedure was as follows:

1.   Calculate the selection interval for the *uchastoks* as follows:

$$I = \frac{\sum_i M_i}{a}$$

where $\sum_i M_i$ is the size of the stratum (total population in the stratum according to the sampling frame) and a is the number of *uchastoks* to be selected in the stratum.

2.   Calculate the cumulated size of each *uchastok*.

3.   Calculate the series of sampling numbers $R, R+I, R+2I, ..., R+(a-1)I$, where R is a random number between 1 and I.

4.   Compare each sampling number with the cumulated sizes.

The first *uchastok* to be selected was the first *uchastok* on the list whose cumulated size was greater or equal to the first sampling number. The second *uchastok* to be selected was the next *uchastok* on the list (after the first selected one) whose cumulated size was greater or equal to the second sampling number, and so on.

In the rural areas, stratification of the *oblasts* and *raions* was geographic, but stratification of the villages within the *raions* was by village population size. This was to ensure that not all large villages entered the sample, since the larger the village, the larger the probability of it being selected (result of selection with probabilities proportional to size).

A.6   Segmentation of Large *Uchastoks* and Villages

Uchastoks and villages could be very large in size. If a large *uchastok*/village was selected, it would require enormous time and effort to list the households it contained. An upper limit of 400 households was imposed to the size of the *uchastok*/village. Therefore, any selected *uchastok*/village that exceeded this upper limit was segmented into several segments, only one of which was retained for the survey. Segmentation was done in the field during the mapping and household listing.

A.7   Sampling Probabilities

The sampling probabilities were calculated separately for each sampling stage, and independently for each stratum. The following notations were used:

P_{1h}:   First-stage sampling probability (*uchastoks*, or villages).
P_{2h}:   Second-stage sampling probability (households).

Let a_h be the number of *uchastoks* selected in stratum h, M_{hi} the size (population according to the sampling frame) of the ith *uchastok* in the stratum, and ΣM_{hi} the total size of the stratum (population according to the sampling frame). The probability of inclusion of the ith *uchastok* in the sample was calculated as follows:

$$P_{1hi} = \frac{a_h M_{hi}}{\sum_i M_{hi}}$$

An intermediate sampling stage was introduced between the first and second sampling stage. This selection stage is not considered an effective stage but only a pseudo-stage in order to reduce the size of the *uchastok*. Let t_{hij} be the estimated size (in proportion) of the jth segment selected for the ith *uchastok*. Note that $\Sigma t_{hij} = 1$. The sampling probabilities are:

$$P_{1hi} \cdot P'_{1hij} = \frac{a_h M_{hi}}{\sum_i M_{hi}} \cdot t_{hij}$$

In the second stage, a number b_{hij} of households were selected from the number M'_{hij} of households newly listed in the jth segment of the ith *uchastok* by the KRDHS teams. We then have

$$P_{1hi} \cdot P'_{1hij} \cdot P_{2hij} = \frac{a_h \cdot M_{hi} \cdot t_{hij}}{\sum_i M_{hi}} \cdot \frac{b_{hij}}{M'_{hij}}$$

For the sample to be self-weighting within the stratum, the overall probability $f_h = P_{1hi} \cdot P'_{1hij} \cdot P_{2hij}$ must be the same for each household within the stratum, where f_h is the sampling fraction calculated separately for stratum h:

$$f_h = \frac{n_h}{N_h}$$

where n_h is the number of households selected in stratum h, and N_h is the number of households that exist in stratum h in 1997.

The selection of the households was systematic with equal probability and the selection interval was calculated as follows:

$$I_{hij} = \frac{1}{P_{2hij}} = \frac{P_{1hi} \times P'_{1hij}}{f_h}$$

In the rural areas, the calculations of the selection probabilities for the different stages of sampling were the same as for the *uchastoks*, with villages equivalent to *uchastoks*.

Because of the non-proportional distribution of the sample to the different strata, sampling weights were required to ensure the actual representativity of the sample at the national level.

Table A.9 Average number of households to be selected in each cluster by urban-rural residence		
Survey region	Urban	Rural
Bishkek City	22	-
Survey Region 2	20	30
Survey Region 3	16	26
Survey Region 4	17	26

APPENDIX B

ESTIMATES OF SAMPLING ERRORS

Mamadou Thiam

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 KRDHS 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 KRDHS 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 KRDHS sample is the result of a multistage stratified design, and consequently it was necessary to use more complex formulae. The computer software used to calculate sampling errors for the KRDHS is the ISSA Sampling Error Module. 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:

$$var(r) = \frac{1-f}{x^2} \sum_{h=1}^{H} \left[\frac{m_h}{m_h-1} \left(\sum_{i=1}^{m_h} z_{hi}^2 - \frac{z_h^2}{m_h} \right) \right]$$

in which

$$z_{hi} = y_{hi} - r.x_{hi} \, , \; and \;\; z_h = y_h - r.x_h$$

where h represents the stratum which varies from 1 to H,
        m_h is the total number of clusters selected in the hth stratum,
        y_{hi} is the sum of the values of variable y in the ith cluster in the hth stratum,

x_{hi} is the sum of the number of cases in the ith cluster in the hth 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 KRDHS, there were 162 non-empty clusters. Hence, 162 replications were created. The variance of a rate r is calculated as follows:

$$ET^2(R) = var(r) = \frac{1}{k(k-1)} \sum_{i=1}^{k} (r_i - r)^2$$

in which

$$r_i = kr - (k-1)r_{(i)}$$

where r is the estimate computed from the full sample of 162 clusters,
$r_{(I)}$ is the estimate computed from the reduced sample of 161 clusters (i^{th} cluster excluded), and
k is the total number of clusters.

In addition to the standard error, ISSA 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. ISSA also computes the relative error and confidence limits for the estimates.

Sampling errors for the KRDHS 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 urban and rural areas, for four survey regions, and for four ethnic groups (Kyrgyz, Russian, Uzbek and other ethnic groups together). 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 considering simple random sample is zero (when the estimate is close to 0 or 1). Estimates and sampling errors of childhood mortality rates only apply to the national sample, the urban and rural samples. In the case of the total fertility rate, the number of unweighted cases is not relevant, as there is no known unweighted value for woman-years of exposure to childbearing.

The confidence interval (e.g., as calculated for *children ever born to women aged 15-49*) can be interpreted as follows: the overall average from the national sample is 2.351 and its standard error is .05. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate, i.e., 2.351±2×.05. There is a high probability (95 percent) that the *true* average number of children ever born to all women aged 15 to 49 is between 2.250 and 2.452.

Sampling errors are analyzed for the national sample and for two separate groups of estimates: (1) means and proportions and (2) complex demographic rates. The relative standard errors for the means and proportions range from 0.1 percent to 29.5 percent with an average of 6 percent; the highest relative

standard errors are for estimates of very low value (e.g., severe anemia among women who were tested). If estimates of very low values (less than 10 percent) were removed, than the average would drop to 3.7 percent. So in general, the relative standard errors for most estimates for the country as a whole is small, except for estimates of very small proportions. The relative standard error for the total fertility rate is small, 4.4 percent. However, for the mortality rates, the average relative standard error is much higher, 17.1 percent.

There are differentials in the relative standard error for the estimates of population subgroups. For example, for the variable *primary/secondary education*, the relative standard errors as a percent of the estimated mean for the whole country, for the rural areas, and for Bishkek are 3 percent, 2.6 percent, and 7.1 percent, respectively.

For the total sample, the value of the design effect (DEFT) averaged over all variables is 1.35, which means that, due to multistage clustering of the sample, variance is increased by a factor of 1.8 over that in an equivalent simple random sample.

Table B.1 Selected variables for sampling errors, Kyrgyz Republic 1997
_____

Variable name	Estimate	Base population
Urban residence	Proportion	All women 15-49
Primary/secondary education	Proportion	All women 15-49
Secondary-special education	Proportion	All women 15-49
Higher education	Proportion	All women 15-49
Never married (in union)	Proportion	All women 15-49
Currently married (in union)	Proportion	All women 15-49
Married before age 20	Proportion	Women 25-49
Had first sexual intercourse before 18	Proportion	Women 25-49
Children ever born	Mean	All women 15-49
Children ever born to women over 40	Mean	Women aged 40-49
Children surviving	Mean	All women 15-49
Knowing any contraceptive method	Proportion	Currently married women 15-49
Knowing any modern contraceptive method	Proportion	Currently married women 15-49
Ever used any contraceptive method	Proportion	Currently married women 15-49
Currently using any method	Proportion	Currently married women 15-49
Currently using a modern method	Proportion	Currently married women 15-49
Currently using pill	Proportion	Currently married women 15-49
Currently using IUD	Proportion	Currently married women 15-49
Currently using condom	Proportion	Currently married women 15-49
Currently using periodic abstinence	Proportion	Currently married women 15-49
Currently using withdrawal	Proportion	Currently married women 15-49
Using public-sector source	Proportion	Current users of modern method
Want no more children	Proportion	Currently married women 15-49
Want to delay at least 2 years	Proportion	Currently married women 15-49
Ideal number of children	Mean	All women 15-49
BMI < 18.5	Proportion	Women 15-49 who were measured
BMI between 18.5 and 30.0	Proportion	Women 15-49 who were measured
BMI > 30.0	Proportion	Women 15-49 who were measured
Weight-for-height	Proportion	Women 15-49 who were measured
Severe anemia	Proportion	Women 15-49 who were tested
Moderate anemia	Proportion	Women 15-49 who were tested
Mild anemia	Proportion	Women 15-49 who were tested
Mothers received medical care at birth	Proportion	Births in last 3 years
Had diarrhea in the last 2 weeks	Proportion	Children under 3
Treated with ORS packets	Proportion	Children under 3 with diarrhea in last 2 weeks
Consulted medical personnel	Proportion	Children under 3 with diarrhea in last 2 weeks
Having health card, seen	Proportion	Children 12-23 months
Received BCG vaccination	Proportion	Children 12-23 months
Received DPT vaccination (3 doses)	Proportion	Children 12-23 months
Received polio vaccination (3 doses)	Proportion	Children 12-23 months
Received measles vaccination	Proportion	Children 12-23 months
Fully immunized	Proportion	Children 12-23 months
Weight-for-height (< -2 SD)	Proportion	Children under 3 who were measured
Height-for-age (< -2 SD)	Proportion	Children under 3 who were measured
Weight-for-age (< -2 SD)	Proportion	Children under 3 who were measured
Children with severe anemia	Proportion	Children under 3 who were tested
Children with moderate anemia	Proportion	Children under 3 who were tested
Children with mild anemia	Proportion	Children under 3 who were tested
Total fertility rate (3 years)	Rate	Women-years of exposure to child-bearing
Neonatal mortality rate	Rate	Number of births
Infant mortality rate	Rate	Number of births
Child mortality rate	Rate	Number of births
Under-five mortality rate	Rate	Number of births
Postneonatal mortality rate	Rate	Number of births

Table B.2 Sampling errors - National sample, Kyrgyz Republic 1997

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
Urban residence	0.335	0.018	3848	3848	2.408	0.055	0.299	0.372
Primary/secondary education	0.533	0.016	3848	3848	1.972	0.030	0.501	0.564
Secondary-special education	0.299	0.012	3848	3848	1.636	0.040	0.275	0.323
Higher education	0.167	0.010	3848	3848	1.638	0.059	0.148	0.187
Never married (in union)	0.215	0.008	3848	3848	1.175	0.036	0.199	0.230
Currently married (in union)	0.695	0.009	3848	3848	1.237	0.013	0.677	0.714
Married before age 20	0.434	0.015	2469	2456	1.464	0.034	0.405	0.463
Had first sexual intercourse before 18	0.125	0.007	2469	2456	1.092	0.058	0.110	0.139
Children ever born	2.351	0.050	3848	3848	1.412	0.021	2.250	2.452
Children ever born to women over 40	4.545	0.133	734	717	1.447	0.029	4.279	4.811
Children surviving	2.123	0.042	3848	3848	1.336	0.020	2.039	2.207
Knowing any contraceptive method	0.998	0.001	2677	2675	1.141	0.001	0.996	1.000
Knowing any modern contraceptive mtd.	0.998	0.001	2677	2675	1.186	0.001	0.995	1.000
Ever used any contraceptive method	0.833	0.012	2677	2675	1.627	0.014	0.810	0.856
Currently using any method	0.595	0.015	2677	2675	1.533	0.024	0.566	0.625
Currently using a modern method	0.489	0.017	2677	2675	1.793	0.035	0.454	0.523
Currently using pill	0.017	0.003	2677	2675	1.119	0.162	0.012	0.023
Currently using IUD	0.382	0.016	2677	2675	1.750	0.043	0.349	0.415
Currently using condom	0.057	0.006	2677	2675	1.283	0.101	0.045	0.068
Currently using periodic abstinence	0.032	0.004	2677	2675	1.311	0.140	0.023	0.040
Currently using withdrawal	0.060	0.006	2677	2675	1.353	0.104	0.047	0.072
Using public-sector source	0.969	0.006	1413	1358	1.343	0.006	0.957	0.982
Want no more children	0.451	0.010	2677	2675	1.071	0.023	0.430	0.471
Want to delay at least 2 years	0.255	0.010	2677	2675	1.194	0.039	0.235	0.275
Ideal number of children	3.674	0.048	3588	3543	1.964	0.013	3.579	3.769
BMI < 18.5	0.069	0.005	3525	3518	1.218	0.075	0.059	0.080
BMI between 18.5 and 30.0	0.845	0.008	3525	3518	1.240	0.009	0.830	0.860
BMI > 30.0	0.086	0.006	3525	3518	1.373	0.076	0.073	0.099
Weight-for-height	0.033	0.004	3522	3514	1.246	0.114	0.026	0.041
Severe anemia	0.015	0.002	3760	3767	1.135	0.149	0.011	0.020
Moderate anemia	0.094	0.006	3760	3767	1.203	0.061	0.082	0.105
Mild anemia	0.282	0.010	3760	3767	1.371	0.036	0.262	0.302
Mothers received medical care at birth	0.981	0.007	1127	1172	1.629	0.007	0.968	0.995
Had diarrhea in the last 2 weeks	0.176	0.014	1068	1104	1.178	0.079	0.148	0.203
Treated with ORS packets	0.404	0.032	185	194	0.885	0.079	0.340	0.468
Consulted medical personnel	0.371	0.044	185	194	1.246	0.119	0.283	0.459
Having health card, seen	1.000	0.000	275	289	na	0.000	1.000	1.000
Received BCG vaccination	0.985	0.008	275	289	1.149	0.008	0.969	1.000
Received DPT vaccination (3 doses)	0.953	0.016	275	289	1.292	0.017	0.920	0.985
Received polio vaccination (3 doses)	0.948	0.019	275	289	1.486	0.020	0.910	0.987
Received measles vaccination	0.854	0.028	275	289	1.320	0.032	0.798	0.909
Fully immunized	0.822	0.027	275	289	1.184	0.033	0.768	0.875
Weight-for-height	0.034	0.007	971	1015	1.170	0.195	0.021	0.048
Height-for-age (< -2 SD)	0.248	0.016	971	1015	1.160	0.065	0.216	0.281
Weight-for-age (< -2 SD)	0.110	0.012	971	1015	1.223	0.109	0.086	0.134
Children with severe anemia	0.014	0.004	980	1021	1.121	0.295	0.006	0.022
Children with moderate anemia	0.244	0.014	980	1021	1.057	0.059	0.216	0.273
Children with mild anemia	0.250	0.017	980	1021	1.215	0.066	0.217	0.283
Total fertility rate (3 years)	3.366	0.148	na	10779	1.632	0.044	3.070	3.662
Neonatal mortality rate	31.614	6.208	2013	2089	1.364	0.196	19.199	44.029
Infant mortality rate	61.340	7.179	2021	2095	1.244	0.117	46.982	75.698
Child mortality rate	11.700	3.449	2019	2093	1.315	0.295	4.803	18.597
Under-five mortality rate	72.322	7.518	2027	2100	1.224	0.104	57.287	87.358
Postneonatal mortality rate	29.726	4.251	2021	2095	1.100	0.143	21.224	38.228

na = Not applicable

Table B.3 Sampling errors - Urban, Kyrgyz Republic 1997

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (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	1485	1290	na	0.000	1.000	1.000
Primary/secondary education	0.359	0.034	1485	1290	2.753	0.095	0.291	0.428
Secondary-special education	0.332	0.022	1485	1290	1.839	0.068	0.287	0.377
Higher education	0.306	0.021	1485	1290	1.733	0.068	0.265	0.347
Never married (in union)	0.227	0.012	1485	1290	1.123	0.054	0.203	0.252
Currently married (in union)	0.663	0.013	1485	1290	1.033	0.019	0.638	0.689
Married before age 20	0.362	0.023	996	869	1.532	0.064	0.316	0.409
Had first sexual intercourse before 18	0.097	0.014	996	869	1.458	0.141	0.069	0.124
Children ever born	1.821	0.073	1485	1290	1.593	0.040	1.675	1.968
Children ever born to women over 40	3.148	0.185	310	260	1.623	0.059	2.779	3.518
Children surviving	1.665	0.058	1485	1290	1.455	0.035	1.549	1.782
Knowing any contraceptive method	0.999	0.001	990	856	0.817	0.001	0.998	1.000
Knowing any modern contraceptive mtd.	0.999	0.001	990	856	0.817	0.001	0.998	1.000
Ever used any contraceptive method	0.887	0.014	990	856	1.397	0.016	0.859	0.915
Currently using any method	0.658	0.024	990	856	1.580	0.036	0.610	0.705
Currently using a modern method	0.550	0.025	990	856	1.571	0.045	0.500	0.599
Currently using pill	0.030	0.005	990	856	0.940	0.170	0.020	0.040
Currently using IUD	0.376	0.019	990	856	1.259	0.052	0.338	0.415
Currently using condom	0.106	0.011	990	856	1.078	0.100	0.085	0.127
Currently using periodic abstinence	0.054	0.011	990	856	1.502	0.199	0.033	0.076
Currently using withdrawal	0.037	0.005	990	856	0.812	0.132	0.027	0.047
Using public-sector source	0.966	0.007	591	496	0.992	0.008	0.952	0.981
Want no more children	0.453	0.018	990	856	1.135	0.040	0.417	0.489
Want to delay at least 2 years	0.227	0.018	990	856	1.361	0.080	0.191	0.264
Ideal number of children	3.134	0.068	1414	1207	1.969	0.022	2.998	3.269
BMI < 18.5	0.070	0.009	1372	1191	1.316	0.130	0.052	0.088
BMI between 18.5 and 30.0	0.839	0.008	1372	1191	0.809	0.010	0.823	0.855
BMI > 30.0	0.091	0.010	1372	1191	1.297	0.111	0.071	0.111
Weight-for-height	0.029	0.006	1370	1189	1.259	0.198	0.017	0.040
Severe anemia	0.010	0.004	1430	1250	1.453	0.385	0.002	0.017
Moderate anemia	0.068	0.010	1430	1250	1.561	0.152	0.048	0.089
Mild anemia	0.243	0.018	1430	1250	1.556	0.073	0.208	0.279
Mothers received medical care at birth	0.993	0.006	286	265	1.167	0.006	0.981	1.000
Had diarrhea in the last 2 weeks	0.151	0.027	276	253	1.201	0.177	0.097	0.205
Treated with ORS packets	0.306	0.102	46	38	1.404	0.332	0.103	0.509
Consulted medical personnel	0.329	0.095	46	38	1.303	0.290	0.138	0.519
Having health card, seen	1.000	0.000	61	62	na	0.000	1.000	1.000
Received BCG vaccination	0.981	0.014	61	62	0.850	0.014	0.954	1.000
Received DPT vaccination (3 doses)	0.972	0.017	61	62	0.854	0.017	0.938	1.000
Received polio vaccination (3 doses)	0.991	0.010	61	62	0.830	0.010	0.971	1.000
Received measles vaccination	0.867	0.054	61	62	1.340	0.063	0.758	0.976
Fully immunized	0.848	0.056	61	62	1.308	0.066	0.736	0.961
Weight-for-height (< -2 SD)	0.043	0.019	243	228	1.539	0.451	0.004	0.081
Height-for-age (< -2 SD)	0.148	0.030	243	228	1.355	0.203	0.088	0.208
Weight-for-age (< -2 SD)	0.059	0.020	243	228	1.383	0.344	0.018	0.099
Children with severe anemia	0.022	0.012	244	227	1.299	0.542	0.000	0.045
Children with moderate anemia	0.159	0.030	244	227	1.336	0.191	0.098	0.219
Children with mild anemia	0.204	0.032	244	227	1.289	0.157	0.140	0.269
Total fertility rate (3 years)	2.291	0.178	na	3651	1.535	0.078	1.936	2.646
Neonatal mortality rate	29.39	9.789	1174	1094	1.931	0.333	9.817	48.973
Infant mortality rate	54.34	10.542	1174	1094	1.600	0.194	33.260	75.430
Child mortality rate	4.042	2.429	1175	1095	1.354	0.601	0.000	8.899
Under-five mortality rate	58.167	10.673	1175	1095	1.582	0.183	36.821	79.514
Postneonatal mortality rate	24.950	7.627	1174	1094	1.667	0.306	9.697	40.204

na = Not applicable

154

Table B.4 Sampling errors - Rural, Kyrgyz Republic 1997

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (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	2363	2558	na	na	0.000	0.000
Primary/secondary education	0.620	0.016	2363	2558	1.622	0.026	0.588	0.652
Secondary-special education	0.283	0.014	2363	2558	1.552	0.051	0.254	0.311
Higher education	0.097	0.009	2363	2558	1.496	0.094	0.079	0.115
Never married (in union)	0.209	0.010	2363	2558	1.177	0.047	0.189	0.228
Currently married (in union)	0.711	0.012	2363	2558	1.311	0.017	0.687	0.736
Married before age 20	0.473	0.019	1473	1587	1.468	0.040	0.435	0.511
Had first sexual intercourse before 18	0.140	0.008	1473	1587	0.906	0.059	0.124	0.156
Children ever born	2.618	0.061	2363	2558	1.243	0.023	2.497	2.739
Children ever born to women over 40	5.338	0.163	424	457	1.407	0.031	5.011	5.665
Children surviving	2.354	0.051	2363	2558	1.194	0.022	2.251	2.456
Knowing any contraceptive method	0.998	0.001	1687	1819	1.143	0.001	0.995	1.000
Knowing any modern contraceptive mtd.	0.997	0.002	1687	1819	1.185	0.002	0.993	1.000
Ever used any contraceptive method	0.808	0.016	1687	1819	1.712	0.020	0.775	0.841
Currently using any method	0.566	0.019	1687	1819	1.608	0.034	0.527	0.605
Currently using a modern method	0.460	0.023	1687	1819	1.929	0.051	0.413	0.507
Currently using pill	0.012	0.004	1687	1819	1.382	0.311	0.004	0.019
Currently using IUD	0.384	0.022	1687	1819	1.882	0.058	0.340	0.429
Currently using condom	0.034	0.006	1687	1819	1.449	0.189	0.021	0.046
Currently using periodic abstinence	0.021	0.004	1687	1819	1.211	0.202	0.012	0.029
Currently using withdrawal	0.071	0.009	1687	1819	1.391	0.123	0.053	0.088
Using public-sector source	0.971	0.009	822	862	1.493	0.009	0.953	0.988
Want no more children	0.450	0.013	1687	1819	1.042	0.028	0.424	0.475
Want to delay at least 2 years	0.268	0.012	1687	1819	1.141	0.046	0.244	0.293
Ideal number of children	3.953	0.068	2174	2336	2.178	0.017	3.817	4.089
BMI < 18.5	0.069	0.006	2153	2327	1.164	0.092	0.056	0.082
BMI between 18.5 and 30.0	0.848	0.011	2153	2327	1.375	0.013	0.827	0.869
BMI > 30.0	0.083	0.008	2153	2327	1.409	0.101	0.066	0.100
Weight-for-height	0.035	0.005	2152	2325	1.242	0.140	0.025	0.045
Severe anemia	0.018	0.003	2330	2517	1.018	0.156	0.012	0.024
Moderate anemia	0.106	0.007	2330	2517	1.082	0.065	0.092	0.120
Mild anemia	0.301	0.012	2330	2517	1.279	0.040	0.277	0.325
Mothers received medical care at birth	0.978	0.009	841	907	1.614	0.009	0.960	0.995
Had diarrhea in the last 2 weeks	0.183	0.016	792	851	1.136	0.087	0.151	0.215
Treated with ORS packets	0.428	0.030	139	156	0.711	0.070	0.368	0.488
Consulted medical personnel	0.381	0.050	139	156	1.203	0.130	0.282	0.481
Having health card, seen	1.000	0.000	214	227	na	0.000	1.000	1.000
Received BCG vaccination	0.986	0.010	214	227	1.209	0.010	0.967	1.000
Received DPT vaccination (3 doses)	0.947	0.020	214	227	1.274	0.021	0.908	0.987
Received polio vaccination (3 doses)	0.937	0.024	214	227	1.436	0.026	0.889	0.985
Received measles vaccination	0.850	0.032	214	227	1.281	0.037	0.787	0.913
Fully immunized	0.815	0.030	214	227	1.116	0.037	0.755	0.875
Weight-for-height (< -2 SD)	0.032	0.007	728	787	1.027	0.210	0.019	0.045
Height-for-age (< -2 SD)	0.277	0.019	728	787	1.130	0.069	0.239	0.316
Weight-for-age (< -2 SD)	0.125	0.014	728	787	1.170	0.115	0.097	0.154
Children with severe anemia	0.012	0.004	736	793	1.030	0.349	0.004	0.020
Children with moderate anemia	0.269	0.016	736	793	0.949	0.058	0.238	0.300
Children with mild anemia	0.263	0.019	736	793	1.177	0.073	0.225	0.302
Total fertility rate (3 years)	3.914	0.182	na	7128	1.449	0.047	3.549	4.279
Neonatal mortality rate	34.444	5.265	2920	3116	1.291	0.153	23.914	44.973
Infant mortality rate	70.448	6.355	2926	3124	1.231	0.090	57.737	83.159
Child mortality rate	12.667	2.791	2926	3123	1.280	0.220	7.086	18.248
Under-five mortality rate	82.223	6.694	2932	3131	1.196	0.081	68.834	95.612
Postneonatal mortality rate	36.005	4.426	2926	3124	1.322	0.123	27.153	44.856

na = Not applicable

Table B.5 Sampling errors - Bishkek City, Kyrgyz Republic 1997

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (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	893	518	na	0.000	1.000	1.000
Primary/secondary education	0.272	0.019	893	518	1.304	0.071	0.233	0.311
Secondary-special education	0.302	0.016	893	518	1.042	0.053	0.270	0.334
Higher education	0.426	0.022	893	518	1.317	0.051	0.382	0.469
Never married (in union)	0.226	0.017	893	518	1.197	0.074	0.193	0.260
Currently married (in union)	0.673	0.016	893	518	1.001	0.023	0.642	0.704
Married before age 20	0.312	0.020	613	356	1.083	0.065	0.271	0.352
Had first sexual intercourse before 18	0.090	0.013	613	356	1.134	0.146	0.064	0.116
Children ever born	1.347	0.040	893	518	0.935	0.029	1.268	1.426
Children ever born to women over 40	2.139	0.104	201	117	1.196	0.048	1.932	2.347
Children surviving	1.296	0.038	893	518	0.949	0.029	1.220	1.372
Knowing any contraceptive method	0.998	0.002	601	349	0.988	0.002	0.995	1.000
Knowing any modern contraceptive mtd.	0.998	0.002	601	349	0.988	0.002	0.995	1.000
Ever used any contraceptive method	0.889	0.015	601	349	1.189	0.017	0.858	0.919
Currently using any method	0.689	0.019	601	349	1.003	0.028	0.651	0.727
Currently using a modern method	0.596	0.023	601	349	1.148	0.039	0.550	0.642
Currently using pill	0.050	0.010	601	349	1.074	0.191	0.031	0.069
Currently using IUD	0.333	0.028	601	349	1.445	0.084	0.277	0.388
Currently using condom	0.158	0.017	601	349	1.114	0.105	0.125	0.191
Currently using periodic abstinence	0.065	0.010	601	349	0.996	0.154	0.045	0.085
Currently using withdrawal	0.010	0.002	601	349	0.578	0.235	0.005	0.015
Using public-sector source	0.960	0.010	371	215	1.006	0.011	0.939	0.980
Want no more children	0.428	0.019	601	349	0.965	0.046	0.389	0.467
Want to delay at least 2 years	0.220	0.022	601	349	1.327	0.102	0.175	0.265
Ideal number of children	2.733	0.083	857	498	2.086	0.030	2.567	2.899
BMI < 18.5	0.071	0.006	834	484	0.675	0.085	0.059	0.083
BMI between 18.5 and 30.0	0.857	0.010	834	484	0.790	0.011	0.838	0.876
BMI > 30.0	0.072	0.009	834	484	1.049	0.130	0.053	0.091
Weight-for-height	0.023	0.004	833	484	0.699	0.159	0.016	0.030
Severe anemia	0.006	0.002	862	500	0.945	0.422	0.001	0.011
Moderate anemia	0.050	0.008	862	500	1.125	0.167	0.033	0.067
Mild anemia	0.235	0.017	862	500	1.198	0.074	0.201	0.270
Mothers received medical care at birth	0.993	0.007	140	81	1.016	0.007	0.978	1.000
Had diarrhea in the last 2 weeks	0.131	0.030	137	80	1.028	0.228	0.071	0.191
Treated with ORS packets	0.278	0.135	18	10	1.280	0.487	0.007	0.548
Consulted medical personnel	0.278	0.093	18	10	0.881	0.335	0.092	0.464
Having health card, seen	1.000	0.000	22	13	na	0.000	1.000	1.000
Received BCG vaccination	0.909	0.065	22	13	1.048	0.071	0.780	1.000
Received DPT vaccination (3 doses)	0.864	0.074	22	13	0.999	0.085	0.716	1.000
Received polio vaccination (3 doses)	0.955	0.045	22	13	0.999	0.047	0.866	1.000
Received measles vaccination	0.864	0.077	22	13	1.050	0.090	0.709	1.000
Fully immunized	0.773	0.096	22	13	1.055	0.124	0.582	0.964
Weight-for-height (< -2 SD)	0.017	0.012	116	67	1.027	0.721	0.000	0.042
Height-for-age (< -2 SD)	0.103	0.027	116	67	0.933	0.257	0.050	0.157
Weight-for-age (< -2 SD)	0.043	0.023	116	67	1.208	0.530	0.000	0.089
Children with severe anemia	0.008	0.009	118	69	1.034	1.031	0.000	0.026
Children with moderate anemia	0.127	0.025	118	69	0.783	0.199	0.076	0.178
Children with mild anemia	0.178	0.040	118	69	1.144	0.225	0.098	0.258
Total fertility rate (3 years)	1.652	0.132	na	1493	1.091	0.080	1.389	1.916

na = Not applicable

156

Table B.6 Sampling errors - North Region, Kyrgyz Republic 1997

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
Urban residence	0.214	0.012	1023	1188	0.945	0.057	0.189	0.238
Primary/secondary education	0.481	0.029	1023	1188	1.837	0.060	0.423	0.538
Secondary-special education	0.360	0.028	1023	1188	1.897	0.079	0.303	0.417
Higher education	0.158	0.013	1023	1188	1.119	0.081	0.133	0.184
Never married (in union)	0.210	0.012	1023	1188	0.903	0.055	0.187	0.233
Currently married (in union)	0.704	0.017	1023	1188	1.164	0.024	0.670	0.737
Married before age 20	0.435	0.018	661	770	0.941	0.042	0.398	0.471
Had first sexual intercourse before 18	0.142	0.014	661	770	1.046	0.100	0.114	0.171
Children ever born	2.318	0.081	1023	1188	1.180	0.035	2.155	2.480
Children ever born to women over 40	4.719	0.234	193	223	1.317	0.050	4.251	5.188
Children surviving	2.108	0.072	1023	1188	1.180	0.034	1.964	2.252
Knowing any contraceptive method	0.999	0.001	721	836	0.984	0.001	0.996	1.000
Knowing any modern contraceptive mtd.	0.999	0.001	721	836	0.984	0.001	0.996	1.000
Ever used any contraceptive method	0.833	0.015	721	836	1.106	0.018	0.802	0.863
Currently using any method	0.592	0.027	721	836	1.457	0.045	0.538	0.645
Currently using a modern method	0.503	0.024	721	836	1.310	0.048	0.454	0.552
Currently using pill	0.016	0.004	721	836	0.813	0.238	0.008	0.024
Currently using IUD	0.405	0.027	721	836	1.462	0.066	0.352	0.459
Currently using condom	0.045	0.010	721	836	1.330	0.228	0.025	0.066
Currently using periodic abstinence	0.034	0.008	721	836	1.241	0.248	0.017	0.050
Currently using withdrawal	0.028	0.006	721	836	0.926	0.202	0.017	0.040
Using public-sector source	0.955	0.016	384	448	1.499	0.017	0.924	0.987
Want no more children	0.462	0.018	721	836	0.972	0.039	0.426	0.498
Want to delay at least 2 years	0.234	0.013	721	836	0.811	0.055	0.208	0.260
Ideal number of children	3.609	0.078	933	1085	1.616	0.022	3.453	3.765
BMI < 18.5	0.073	0.009	944	1096	1.103	0.128	0.054	0.092
BMI between 18.5 and 30.0	0.832	0.013	944	1096	1.080	0.016	0.806	0.859
BMI > 30.0	0.095	0.011	944	1096	1.112	0.112	0.074	0.116
Weight-for-height	0.032	0.008	943	1095	1.447	0.259	0.015	0.049
Severe anemia	0.014	0.004	997	1157	1.053	0.281	0.006	0.022
Moderate anemia	0.087	0.009	997	1157	1.041	0.107	0.069	0.106
Mild anemia	0.273	0.015	997	1157	1.088	0.056	0.242	0.304
Mothers received medical care at birth	0.992	0.005	288	330	1.061	0.006	0.981	1.000
Had diarrhea in the last 2 weeks	0.247	0.039	269	308	1.459	0.159	0.168	0.325
Treated with ORS packets	0.425	0.059	65	76	0.951	0.138	0.307	0.542
Consulted medical personnel	0.385	0.063	65	76	1.038	0.164	0.258	0.511
Having health card, seen	1.000	0.000	59	67	na	0.000	1.000	1.000
Received BCG vaccination	1.000	0.000	59	67	na	0.000	1.000	1.000
Received DPT vaccination (3 doses)	0.983	0.016	59	67	0.947	0.016	0.952	1.000
Received polio vaccination (3 doses)	0.983	0.016	59	67	0.947	0.016	0.952	1.000
Received measles vaccination	0.831	0.046	59	67	0.932	0.055	0.739	0.923
Fully immunized	0.831	0.046	59	67	0.932	0.055	0.739	0.923
Weight-for-height (< -2 SD)	0.021	0.010	247	282	1.038	0.459	0.002	0.040
Height-for-age (< -2 SD)	0.180	0.028	247	282	1.108	0.158	0.123	0.237
Weight-for-age (< -2 SD)	0.060	0.020	247	282	1.309	0.332	0.020	0.100
Children with severe anemia	0.021	0.009	249	284	1.043	0.459	0.002	0.039
Children with moderate anemia	0.304	0.028	249	284	0.958	0.092	0.248	0.360
Children with mild anemia	0.203	0.024	249	284	0.922	0.118	0.155	0.251
Total fertility rate (3 years)	3.122	0.202	na	3331	1.147	0.065	2.718	3.526

na = Not applicable

157

Table B.7 Sampling errors - East Region, Kyrgyz Republic 1997

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
Urban residence	0.236	0.026	770	215	1.668	0.108	0.185	0.287
Primary/secondary education	0.569	0.024	770	215	1.337	0.042	0.521	0.616
Secondary-special education	0.324	0.018	770	215	1.060	0.055	0.288	0.359
Higher education	0.106	0.013	770	215	1.168	0.122	0.080	0.132
Never married (in union)	0.220	0.020	770	215	1.341	0.091	0.180	0.260
Currently married (in union)	0.707	0.020	770	215	1.207	0.028	0.668	0.747
Married before age 20	0.488	0.026	476	133	1.142	0.054	0.436	0.540
Had first sexual intercourse before 18	0.154	0.018	476	133	1.060	0.114	0.119	0.189
Children ever born	2.790	0.115	770	215	1.258	0.041	2.561	3.019
Children ever born to women over 40	5.761	0.258	137	38	1.329	0.045	5.245	6.278
Children surviving	2.505	0.090	770	215	1.119	0.036	2.324	2.686
Knowing any contraceptive method	0.998	0.002	544	152	0.976	0.002	0.995	1.000
Knowing any modern contraceptive mtd.	0.998	0.002	544	152	0.976	0.002	0.995	1.000
Ever used any contraceptive method	0.801	0.013	544	152	0.745	0.016	0.775	0.826
Currently using any method	0.540	0.023	544	152	1.074	0.043	0.494	0.586
Currently using a modern method	0.516	0.024	544	152	1.105	0.046	0.468	0.563
Currently using pill	0.009	0.005	544	152	1.186	0.532	0.000	0.019
Currently using IUD	0.435	0.025	544	152	1.153	0.056	0.386	0.484
Currently using condom	0.020	0.006	544	152	0.944	0.283	0.009	0.031
Currently using periodic abstinence	0.018	0.005	544	152	0.946	0.296	0.008	0.029
Currently using withdrawal	0.002	0.002	544	152	0.991	0.984	0.000	0.006
Using public-sector source	0.962	0.014	289	81	1.201	0.014	0.934	0.989
Want no more children	0.474	0.021	544	152	0.993	0.045	0.432	0.517
Want to delay at least 2 years	0.264	0.023	544	152	1.221	0.087	0.218	0.310
Ideal number of children	4.113	0.049	739	206	0.861	0.012	4.015	4.212
BMI < 18.5	0.083	0.008	697	195	0.758	0.095	0.067	0.099
BMI between 18.5 and 30.0	0.854	0.014	697	195	1.011	0.016	0.827	0.881
BMI > 30.0	0.063	0.009	697	195	0.987	0.144	0.045	0.081
Weight-for-height	0.040	0.005	697	195	0.734	0.136	0.029	0.051
Severe anemia	0.005	0.003	756	211	0.952	0.475	0.000	0.010
Moderate anemia	0.072	0.011	756	211	1.125	0.147	0.051	0.093
Mild anemia	0.229	0.016	756	211	1.058	0.071	0.196	0.261
Mothers received medical care at birth	0.996	0.004	279	78	1.010	0.004	0.989	1.000
Had diarrhea in the last 2 weeks	0.152	0.026	268	75	1.111	0.168	0.101	0.203
Treated with ORS packets	0.615	0.058	41	11	0.731	0.095	0.498	0.732
Consulted medical personnel	0.593	0.060	41	11	0.726	0.100	0.474	0.712
Having health card, seen	1.000	0.000	80	22	na	0.000	1.000	1.000
Received BCG vaccination	1.000	0.000	80	22	na	0.000	1.000	1.000
Received DPT vaccination (3 doses)	1.000	0.000	80	22	na	0.000	1.000	1.000
Received polio vaccination (3 doses)	0.962	0.020	80	22	0.937	0.021	0.922	1.000
Received measles vaccination	0.787	0.042	80	22	0.913	0.053	0.704	0.871
Fully immunized	0.775	0.044	80	22	0.952	0.057	0.686	0.863
Weight-for-height (< -2 SD)	0.066	0.014	241	68	0.859	0.206	0.039	0.094
Height-for-age (< -2 SD)	0.324	0.041	241	68	1.298	0.127	0.242	0.407
Weight-for-age (< -2 SD)	0.123	0.027	241	68	1.317	0.221	0.069	0.178
Children with severe anemia	0.036	0.013	245	69	1.121	0.368	0.010	0.063
Children with moderate anemia	0.204	0.038	245	69	1.445	0.186	0.128	0.280
Children with mild anemia	0.253	0.028	245	69	0.985	0.111	0.197	0.309
Total fertility rate (3 years)	4.342	0.266	na	581	1.352	0.061	3.809	4.875

na = Not applicable

158

Table B.8 Sampling errors - South Region, Kyrgyz Republic 1997

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
Urban residence	0.242	0.031	1162	1926	2.489	0.129	0.180	0.305
Primary/secondary education	0.631	0.024	1162	1926	1.682	0.038	0.583	0.678
Secondary-special education	0.258	0.016	1162	1926	1.227	0.061	0.227	0.290
Higher education	0.110	0.016	1162	1926	1.781	0.149	0.077	0.143
Never married (in union)	0.214	0.013	1162	1926	1.069	0.060	0.188	0.240
Currently married (in union)	0.694	0.014	1162	1926	1.068	0.021	0.666	0.723
Married before age 20	0.464	0.026	719	1197	1.410	0.057	0.412	0.517
Had first sexual intercourse before 18	0.121	0.011	719	1197	0.872	0.088	0.100	0.142
Children ever born	2.593	0.078	1162	1926	1.150	0.030	2.437	2.748
Children ever born to women over 40	5.121	0.197	203	339	1.193	0.038	4.728	5.515
Children surviving	2.312	0.064	1162	1926	1.081	0.028	2.184	2.440
Knowing any contraceptive method	0.998	0.002	811	1338	0.987	0.002	0.994	1.000
Knowing any modern contraceptive mtd.	0.997	0.002	811	1338	1.012	0.002	0.992	1.000
Ever used any contraceptive method	0.822	0.021	811	1338	1.577	0.026	0.780	0.865
Currently using any method	0.580	0.023	811	1338	1.350	0.040	0.533	0.627
Currently using a modern method	0.449	0.031	811	1338	1.761	0.069	0.387	0.510
Currently using pill	0.011	0.005	811	1338	1.260	0.423	0.002	0.020
Currently using IUD	0.374	0.027	811	1338	1.606	0.073	0.320	0.429
Currently using condom	0.042	0.008	811	1338	1.126	0.190	0.026	0.058
Currently using periodic abstinence	0.023	0.007	811	1338	1.260	0.289	0.010	0.036
Currently using withdrawal	0.099	0.011	811	1338	1.085	0.115	0.076	0.122
Using public-sector source	0.984	0.006	369	615	0.924	0.006	0.972	0.996
Want no more children	0.447	0.016	811	1338	0.940	0.037	0.415	0.480
Want to delay at least 2 years	0.277	0.017	811	1338	1.105	0.063	0.242	0.311
Ideal number of children	3.929	0.083	1059	1754	1.950	0.021	3.763	4.095
BMI < 18.5	0.065	0.008	1050	1742	1.108	0.130	0.048	0.082
BMI between 18.5 and 30.0	0.849	0.012	1050	1742	1.117	0.015	0.824	0.874
BMI > 30.0	0.086	0.011	1050	1742	1.254	0.126	0.064	0.108
Weight-for-height	0.036	0.005	1049	1741	0.944	0.151	0.025	0.047
Severe anemia	0.020	0.004	1145	1898	0.906	0.189	0.012	0.027
Moderate anemia	0.111	0.009	1145	1898	0.972	0.081	0.093	0.129
Mild anemia	0.305	0.016	1145	1898	1.179	0.053	0.273	0.337
Mothers received medical care at birth	0.973	0.012	420	683	1.352	0.012	0.950	0.996
Had diarrhea in the last 2 weeks	0.150	0.016	394	641	0.825	0.104	0.119	0.181
Treated with ORS packets	0.376	0.044	61	96	0.672	0.117	0.288	0.464
Consulted medical personnel	0.344	0.074	61	96	1.158	0.216	0.196	0.493
Having health card, seen	1.000	0.000	114	186	na	0.000	1.000	1.000
Received BCG vaccination	0.983	0.012	114	186	0.982	0.012	0.960	1.000
Received DPT vaccination (3 doses)	0.942	0.023	114	186	1.046	0.025	0.896	0.988
Received polio vaccination (3 doses)	0.933	0.029	114	186	1.231	0.031	0.876	0.991
Received measles vaccination	0.869	0.038	114	186	1.202	0.044	0.792	0.946
Fully immunized	0.828	0.037	114	186	1.042	0.045	0.753	0.902
Weight-for-height (< -2 SD)	0.039	0.010	367	598	0.995	0.261	0.019	0.060
Height-for-age (< -2 SD)	0.289	0.022	367	598	0.920	0.077	0.244	0.333
Weight-for-age (< -2 SD)	0.140	0.017	367	598	0.926	0.121	0.106	0.174
Children with severe anemia	0.009	0.005	368	599	1.035	0.578	0.000	0.019
Children with moderate anemia	0.234	0.020	368	599	0.880	0.085	0.194	0.274
Children with mild anemia	0.280	0.026	368	599	1.079	0.091	0.229	0.331
Total fertility rate (3 years)	3.892	0.238	na	5374	1.366	0.061	3.416	4.369

na = Not applicable

Table B.9 Sampling errors - Kyrgyz ethnic group, Kyrgyz Republic 1997

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
Urban residence	0.290	0.029	2560	2380	3.226	0.100	0.232	0.348
Primary/secondary education	0.529	0.022	2560	2380	2.190	0.041	0.486	0.572
Secondary-special education	0.285	0.014	2560	2380	1.613	0.051	0.256	0.313
Higher education	0.186	0.015	2560	2380	1.906	0.079	0.157	0.216
Never married (in union)	0.226	0.010	2560	2380	1.256	0.046	0.205	0.246
Currently married (in union)	0.685	0.012	2560	2380	1.269	0.017	0.662	0.709
Married before age 20	0.441	0.018	1620	1505	1.420	0.040	0.406	0.476
Had first sexual intercourse before 18	0.119	0.008	1620	1505	0.932	0.063	0.104	0.134
Children ever born	2.563	0.064	2560	2380	1.360	0.025	2.434	2.691
Children ever born to women over 40	5.291	0.163	448	423	1.417	0.031	4.965	5.617
Children surviving	2.296	0.053	2560	2380	1.292	0.023	2.189	2.403
Knowing any contraceptive method	0.998	0.001	1760	1632	1.189	0.001	0.996	1.000
Knowing any modern contraceptive mtd.	0.998	0.001	1760	1632	1.189	0.001	0.996	1.000
Ever used any contraceptive method	0.803	0.014	1760	1632	1.514	0.018	0.774	0.831
Currently using any method	0.558	0.016	1760	1632	1.367	0.029	0.525	0.590
Currently using a modern method	0.470	0.018	1760	1632	1.484	0.038	0.435	0.506
Currently using pill	0.011	0.003	1760	1632	1.023	0.226	0.006	0.017
Currently using IUD	0.392	0.018	1760	1632	1.559	0.046	0.356	0.429
Currently using condom	0.034	0.006	1760	1632	1.354	0.172	0.022	0.046
Currently using periodic abstinence	0.027	0.005	1760	1632	1.196	0.170	0.018	0.037
Currently using withdrawal	0.046	0.007	1760	1632	1.337	0.146	0.032	0.059
Using public-sector source	0.980	0.006	891	790	1.276	0.006	0.968	0.992
Want no more children	0.424	0.012	1760	1632	1.039	0.029	0.400	0.449
Want to delay at least 2 years	0.291	0.012	1760	1632	1.113	0.041	0.267	0.315
Ideal number of children	4.005	0.047	2384	2180	1.558	0.012	3.911	4.098
BMI < 18.5	0.070	0.007	2332	2168	1.265	0.096	0.056	0.083
BMI between 18.5 and 30.0	0.861	0.010	2332	2168	1.344	0.011	0.842	0.880
BMI > 30.0	0.070	0.007	2332	2168	1.334	0.101	0.055	0.084
Weight-for-height	0.032	0.005	2331	2168	1.251	0.141	0.023	0.042
Severe anemia	0.020	0.003	2518	2347	1.173	0.165	0.013	0.026
Moderate anemia	0.099	0.009	2518	2347	1.522	0.092	0.081	0.117
Mild anemia	0.284	0.012	2518	2347	1.385	0.044	0.259	0.309
Mothers received medical care at birth	0.978	0.010	820	772	1.753	0.010	0.959	0.998
Had diarrhea in the last 2 weeks	0.187	0.021	773	720	1.431	0.111	0.145	0.228
Treated with ORS packets	0.401	0.039	138	134	0.924	0.096	0.324	0.478
Consulted medical personnel	0.349	0.051	138	134	1.263	0.146	0.247	0.451
Having health card, seen	1.000	0.000	209	196	na	0.000	1.000	1.000
Received BCG vaccination	0.992	0.008	209	196	1.274	0.008	0.977	1.000
Received DPT vaccination (3 doses)	0.957	0.023	209	196	1.651	0.024	0.910	1.000
Received polio vaccination (3 doses)	0.947	0.025	209	196	1.617	0.026	0.898	0.997
Received measles vaccination	0.851	0.031	209	196	1.259	0.036	0.789	0.913
Fully immunized	0.823	0.029	209	196	1.093	0.035	0.765	0.880
Weight-for-height (< -2 SD)	0.036	0.008	698	658	1.172	0.229	0.019	0.052
Height-for-age (< -2 SD)	0.286	0.021	698	658	1.173	0.072	0.245	0.327
Weight-for-age (< -2 SD)	0.117	0.017	698	658	1.420	0.147	0.082	0.151
Children with severe anemia	0.014	0.005	709	664	1.030	0.318	0.005	0.023
Children with moderate anemia	0.257	0.019	709	664	1.180	0.075	0.219	0.296
Children with mild anemia	0.269	0.024	709	664	1.413	0.088	0.222	0.317
Total fertility rate (3 years)	3.556	0.181	na	6645	1.479	0.051	3.193	3.918

na = Not applicable

160

Table B.10 Sampling errors - Russian ethnic group, Kyrgyz Republic 1997

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
Urban residence	0.712	0.051	493	412	2.496	0.072	0.610	0.814
Primary/secondary education	0.293	0.025	493	412	1.237	0.087	0.242	0.344
Secondary-special education	0.440	0.033	493	412	1.486	0.076	0.374	0.507
Higher education	0.266	0.025	493	412	1.265	0.095	0.216	0.317
Never married (in union)	0.156	0.014	493	412	0.840	0.088	0.128	0.183
Currently married (in union)	0.726	0.020	493	412	0.979	0.027	0.687	0.766
Married before age 20	0.403	0.027	354	288	1.028	0.067	0.349	0.456
Had first sexual intercourse before 18	0.145	0.026	354	288	1.403	0.181	0.093	0.198
Children ever born	1.350	0.060	493	412	1.177	0.044	1.231	1.469
Children ever born to women over 40	2.145	0.080	143	113	0.970	0.037	1.985	2.306
Children surviving	1.280	0.049	493	412	1.051	0.039	1.181	1.379
Knowing any contraceptive method	1.000	0.000	364	300	na	0.000	1.000	1.000
Knowing any modern contraceptive mtd.	1.000	0.000	364	300	na	0.000	1.000	1.000
Ever used any contraceptive method	0.932	0.014	364	300	1.063	0.015	0.904	0.960
Currently using any method	0.718	0.028	364	300	1.190	0.039	0.662	0.774
Currently using a modern method	0.581	0.036	364	300	1.384	0.062	0.509	0.652
Currently using pill	0.056	0.014	364	300	1.130	0.243	0.029	0.083
Currently using IUD	0.315	0.029	364	300	1.196	0.093	0.257	0.373
Currently using condom	0.178	0.020	364	300	0.994	0.112	0.138	0.218
Currently using periodic abstinence	0.097	0.018	364	300	1.161	0.186	0.061	0.133
Currently using withdrawal	0.027	0.013	364	300	1.519	0.476	0.001	0.053
Using public-sector source	0.927	0.022	230	187	1.278	0.024	0.884	0.971
Want no more children	0.499	0.024	364	300	0.931	0.049	0.450	0.548
Want to delay at least 2 years	0.122	0.019	364	300	1.080	0.152	0.085	0.159
Ideal number of children	2.351	0.059	468	388	1.316	0.025	2.234	2.468
BMI < 18.5	0.069	0.014	464	385	1.216	0.208	0.040	0.098
BMI between 18.5 and 30.0	0.822	0.018	464	385	1.018	0.022	0.786	0.858
BMI > 30.0	0.109	0.014	464	385	0.970	0.129	0.081	0.137
Weight-for-height	0.030	0.010	464	385	1.285	0.343	0.009	0.050
Severe anemia	0.003	0.003	470	391	1.134	0.981	0.000	0.008
Moderate anemia	0.042	0.010	470	391	1.059	0.234	0.022	0.061
Mild anemia	0.203	0.027	470	391	1.428	0.131	0.150	0.256
Mothers received medical care at birth	1.000	0.000	61	51	na	0.000	1.000	1.000
Had diarrhea in the last 2 weeks	0.110	0.042	59	49	1.027	0.384	0.025	0.194
Treated with ORS packets	0.370	0.209	8	5	1.097	0.566	0.000	0.788
Consulted medical personnel	0.370	0.209	8	5	1.097	0.566	0.000	0.788
Having health card, seen	1.000	0.000	12	10	na	0.000	1.000	1.000
Received BCG vaccination	0.886	0.081	12	10	0.888	0.092	0.723	1.000
Received DPT vaccination (3 doses)	0.943	0.057	12	10	0.859	0.061	0.829	1.000
Received polio vaccination (3 doses)	1.000	0.000	12	10	na	0.000	1.000	1.000
Received measles vaccination	0.834	0.098	12	10	0.910	0.118	0.638	1.000
Fully immunized	0.777	0.106	12	10	0.871	0.136	0.566	0.988
Weight-for-height (< -2 SD)	0.006	0.006	56	46	0.570	1.010	0.000	0.017
Height-for-age (< -2 SD)	0.043	0.030	56	46	1.077	0.685	0.000	0.102
Weight-for-age (< -2 SD)	0.006	0.006	56	46	0.570	1.010	0.000	0.017
Children with severe anemia	0.000	0.000	55	45	na	na	0.000	0.000
Children with moderate anemia	0.225	0.059	55	45	1.046	0.262	0.107	0.342
Children with mild anemia	0.108	0.053	55	45	1.259	0.492	0.002	0.215
Total fertility rate (3 years)	1.459	0.217	na	1192	1.280	0.149	1.026	1.893

na = Not applicable

161

Table B.11 Sampling errors - Uzbek ethnic group, Kyrgyz Republic 1997

Variable	Value (R)	Standard error (SE)	Number of cases Unweighted (N)	Number of cases Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits R-2SE	Confidence limits R+2SE
Urban residence	0.192	0.048	439	691	2.565	0.251	0.096	0.289
Primary/secondary education	0.712	0.030	439	691	1.397	0.042	0.651	0.772
Secondary-special education	0.245	0.025	439	691	1.217	0.102	0.195	0.295
Higher education	0.041	0.009	439	691	0.970	0.224	0.023	0.060
Never married (in union)	0.206	0.014	439	691	0.750	0.070	0.177	0.235
Currently married (in union)	0.729	0.018	439	691	0.860	0.025	0.693	0.766
Married before age 20	0.446	0.034	265	419	1.104	0.076	0.378	0.514
Had first sexual intercourse before 18	0.117	0.017	265	419	0.850	0.144	0.084	0.151
Children ever born	2.473	0.070	439	691	0.702	0.028	2.332	2.614
Children ever born to women over 40	4.858	0.324	71	108	1.242	0.067	4.211	5.506
Children surviving	2.257	0.063	439	691	0.705	0.028	2.131	2.384
Knowing any contraceptive method	1.000	0.000	319	504	na	0.000	1.000	1.000
Knowing any modern contraceptive mtd.	0.997	0.003	319	504	1.026	0.003	0.991	1.000
Ever used any contraceptive method	0.864	0.022	319	504	1.136	0.025	0.820	0.908
Currently using any method	0.627	0.040	319	504	1.476	0.064	0.547	0.708
Currently using a modern method	0.495	0.053	319	504	1.884	0.107	0.390	0.601
Currently using pill	0.015	0.009	319	504	1.238	0.556	0.000	0.032
Currently using IUD	0.411	0.048	319	504	1.736	0.117	0.315	0.506
Currently using condom	0.046	0.014	319	504	1.196	0.304	0.018	0.075
Currently using periodic abstinence	0.003	0.003	319	504	0.860	0.868	0.000	0.008
Currently using withdrawal	0.123	0.015	319	504	0.835	0.125	0.092	0.154
Using public-sector source	0.977	0.008	164	258	0.714	0.009	0.960	0.993
Want no more children	0.526	0.025	319	504	0.901	0.048	0.476	0.577
Want to delay at least 2 years	0.230	0.023	319	504	0.992	0.102	0.184	0.277
Ideal number of children	3.638	0.070	405	638	1.182	0.019	3.498	3.777
BMI < 18.5	0.050	0.010	397	625	0.894	0.195	0.031	0.070
BMI between 18.5 and 30.0	0.832	0.019	397	625	1.027	0.023	0.794	0.871
BMI > 30.0	0.117	0.018	397	625	1.111	0.153	0.082	0.153
Weight-for-height	0.027	0.008	397	625	0.947	0.286	0.012	0.042
Severe anemia	0.011	0.003	432	680	0.564	0.253	0.006	0.017
Moderate anemia	0.117	0.018	432	680	1.139	0.151	0.081	0.152
Mild anemia	0.338	0.024	432	680	1.036	0.070	0.290	0.385
Mothers received medical care at birth	0.988	0.007	164	261	0.843	0.007	0.974	1.000
Had diarrhea in the last 2 weeks	0.139	0.026	159	253	0.934	0.189	0.087	0.192
Treated with ORS packets	0.352	0.104	22	35	0.997	0.296	0.144	0.560
Consulted medical personnel	0.352	0.099	22	35	0.953	0.283	0.153	0.551
Having health card, seen	1.000	0.000	43	71	na	0.000	1.000	1.000
Received BCG vaccination	0.978	0.023	43	71	1.031	0.023	0.933	1.000
Received DPT vaccination (3 doses)	0.934	0.015	43	71	0.414	0.016	0.904	0.965
Received polio vaccination (3 doses)	0.934	0.026	43	71	0.701	0.028	0.882	0.986
Received measles vaccination	0.839	0.062	43	71	1.127	0.074	0.714	0.963
Fully immunized	0.795	0.057	43	71	0.947	0.072	0.680	0.910
Weight-for-height (< -2 SD)	0.035	0.018	150	239	1.195	0.513	0.000	0.071
Height-for-age (< -2 SD)	0.207	0.027	150	239	0.841	0.132	0.152	0.262
Weight-for-age (< -2 SD)	0.131	0.037	150	239	1.358	0.285	0.056	0.205
Children with severe anemia	0.009	0.009	151	240	1.181	1.014	0.000	0.027
Children with moderate anemia	0.203	0.035	151	240	1.039	0.173	0.133	0.273
Children with mild anemia	0.257	0.028	151	240	0.798	0.109	0.201	0.313
Total fertility rate (3 years)	2.414	0.670	na	192	1.438	0.277	1.074	3.753

na = Not applicable

Table B.12 Sampling errors - Other ethnic groups, Kyrgyz Republic 1997

| | | Standard | Number of cases | | Design | Relative | Confidence limits | |
| | Value | error | Unweighted | Weighted | effect | error | | |
Variable	(R)	(SE)	(N)	(WN)	(DEFT)	(SE/R)	R-2SE	R+2SE
Urban residence	0.439	0.086	291	306	2.956	0.196	0.267	0.611
Primary/secondary education	0.482	0.053	291	306	1.812	0.110	0.376	0.589
Secondary-special education	0.349	0.038	291	306	1.375	0.110	0.272	0.426
Higher education	0.162	0.024	291	306	1.117	0.149	0.114	0.210
Never married (in union)	0.232	0.019	291	306	0.763	0.082	0.194	0.270
Currently married (in union)	0.662	0.028	291	306	1.024	0.043	0.605	0.719
Married before age 20	0.396	0.049	191	208	1.370	0.123	0.299	0.494
Had first sexual intercourse before 18	0.149	0.023	191	208	0.892	0.155	0.103	0.195
Children ever born	1.944	0.109	291	306	0.988	0.056	1.725	2.163
Children ever born to women over 40	3.658	0.291	60	61	0.967	0.080	3.075	4.241
Children surviving	1.752	0.085	291	306	0.913	0.048	1.582	1.922
Knowing any contraceptive method	0.989	0.008	193	202	1.089	0.008	0.973	1.000
Knowing any modern contraceptive mtd.	0.989	0.008	193	202	1.089	0.008	0.973	1.000
Ever used any contraceptive method	0.866	0.026	193	202	1.045	0.030	0.814	0.917
Currently using any method	0.644	0.042	193	202	1.224	0.066	0.560	0.729
Currently using a modern method	0.508	0.038	193	202	1.060	0.075	0.431	0.584
Currently using pill	0.017	0.007	193	202	0.780	0.428	0.002	0.032
Currently using IUD	0.357	0.031	193	202	0.883	0.085	0.296	0.418
Currently using condom	0.082	0.019	193	202	0.973	0.236	0.043	0.120
Currently using periodic abstinence	0.027	0.014	193	202	1.211	0.527	0.000	0.055
Currently using withdrawal	0.066	0.023	193	202	1.281	0.347	0.020	0.112
Using public-sector source	0.953	0.019	107	106	0.908	0.020	0.915	0.990
Want no more children	0.427	0.046	193	202	1.284	0.107	0.335	0.519
Want to delay at least 2 years	0.244	0.035	193	202	1.119	0.142	0.175	0.314
Ideal number of children	3.164	0.100	270	281	1.289	0.032	2.964	3.364
BMI < 18.5	0.103	0.018	274	287	0.987	0.176	0.067	0.139
BMI between 18.5 and 30.0	0.786	0.028	274	287	1.118	0.035	0.731	0.842
BMI > 30.0	0.111	0.022	274	287	1.182	0.203	0.066	0.156
Weight-for-height	0.060	0.017	272	284	1.203	0.290	0.025	0.094
Severe anemia	0.008	0.004	281	296	0.825	0.560	0.000	0.016
Moderate anemia	0.072	0.014	281	296	0.902	0.193	0.044	0.100
Mild anemia	0.255	0.025	281	296	0.963	0.098	0.205	0.305
Mothers received medical care at birth	0.972	0.020	69	76	1.078	0.021	0.931	1.000
Had diarrhea in the last 2 weeks	0.214	0.050	65	70	0.981	0.234	0.114	0.314
Treated with ORS packets	0.494	0.147	14	15	1.106	0.297	0.200	0.787
Consulted medical personnel	0.445	0.158	14	15	1.196	0.355	0.129	0.760
Having health card, seen	1.000	0.000	11	12	na	0.000	1.000	1.000
Received BCG vaccination	1.000	0.000	11	12	na	0.000	1.000	1.000
Received DPT vaccination (3 doses)	1.000	0.000	11	12	na	0.000	1.000	1.000
Received polio vaccination (3 doses)	1.000	0.000	11	12	na	0.000	1.000	1.000
Received measles vaccination	1.000	0.000	11	12	na	0.000	1.000	1.000
Fully immunized	1.000	0.000	11	12	na	0.000	1.000	1.000
Weight-for-height (< -2 SD)	0.044	0.037	57	61	1.364	0.835	0.000	0.118
Height-for-age (< -2 SD)	0.166	0.043	57	61	0.864	0.256	0.081	0.251
Weight-for-age (< -2 SD)	0.061	0.038	57	61	1.194	0.614	0.000	0.137
Children with severe anemia	0.040	0.029	58	62	1.123	0.714	0.000	0.098
Children with moderate anemia	0.263	0.068	58	62	1.192	0.258	0.128	0.399
Children with mild anemia	0.159	0.060	58	62	1.271	0.380	0.038	0.279
Total fertility rate (3 years)	4.191	0.322	na	1875	1.451	0.077	3.548	4.835

na = Not applicable

163

APPENDIX C

DATA QUALITY TABLES

Table C.1 Household age distribution

Single-year age distribution of the de facto household population by sex (weighted), Kyrgyz Republic 1997

	Males		Females			Males		Females	
Age	Number	Percent	Number	Percent	Age	Number	Percent	Number	Percent
<1	197	2.4	200	2.3	36	120	1.5	139	1.6
1	204	2.5	177	2.1	37	129	1.6	124	1.5
2	205	2.5	190	2.2	38	126	1.5	134	1.6
3	211	2.6	200	2.3	39	111	1.4	102	1.2
4	198	2.4	239	2.8	40	119	1.4	69	0.8
5	195	2.4	206	2.4	41	87	1.1	100	1.2
6	208	2.5	222	2.6	42	81	1.0	92	1.1
7	244	3.0	195	2.3	43	68	0.8	83	1.0
8	239	2.9	188	2.2	44	65	0.8	94	1.1
9	222	2.7	212	2.5	45	81	1.0	78	0.9
10	234	2.8	250	2.9	46	65	0.8	63	0.7
11	218	2.7	238	2.8	47	64	0.8	72	0.8
12	248	3.0	213	2.5	48	60	0.7	55	0.6
13	247	3.0	201	2.4	49	45	0.6	52	0.6
14	203	2.5	205	2.4	50	64	0.8	72	0.8
15	200	2.4	187	2.2	51	28	0.3	41	0.5
16	166	2.0	160	1.9	52	32	0.4	38	0.4
17	152	1.8	140	1.6	53	22	0.3	21	0.2
18	137	1.7	137	1.6	54	34	0.4	21	0.3
19	132	1.6	155	1.8	55	41	0.5	52	0.6
20	143	1.7	146	1.7	56	47	0.6	54	0.6
21	142	1.7	140	1.6	57	44	0.5	57	0.7
22	141	1.7	132	1.5	58	40	0.5	50	0.6
23	123	1.5	119	1.4	59	36	0.4	59	0.7
24	136	1.7	138	1.6	60	63	0.8	82	1.0
25	140	1.7	121	1.4	61	34	0.4	68	0.8
26	112	1.4	108	1.3	62	52	0.6	61	0.7
27	152	1.9	135	1.6	63	32	0.4	46	0.5
28	96	1.2	99	1.2	64	29	0.3	43	0.5
29	99	1.2	88	1.0	65	47	0.6	64	0.8
30	115	1.4	129	1.5	66	42	0.5	30	0.4
31	93	1.1	129	1.5	67	46	0.6	36	0.4
32	90	1.1	149	1.7	68	30	0.4	53	0.6
33	97	1.2	126	1.5	69	36	0.4	48	0.6
34	133	1.6	137	1.6	70+	206	2.5	346	4.1
35	107	1.3	110	1.3	Total	8,207	100.0	8,521	100.0

Note: The de facto population includes all residents and nonresidents who slept in the household the night before the interview.

Table C.2 Age distribution of eligible and interviewed women

Percent distribution of the de facto household population of women age
10-54 and of interviewed women age 15-49, and the percentage of eligible
women who were interviewed (weighted) by five-year age groups, Kyrgyz
Republic 1997

| | Household popu- lation of women | | Interviewed women | | Percent interviewed |
Age	Number	Percent	Number	Percent	(weighted)
10-14	1,107	-	-	-	-
15-19	780	19.3	760	19.5	97.4
20-24	675	16.7	659	16.9	97.7
25-29	550	13.6	535	13.7	97.3
30-34	670	16.6	639	16.4	95.4
35-39	608	15.0	586	15.0	96.4
40-44	439	10.9	417	10.7	95.1
45-49	320	7.9	310	7.9	96.8
50-54	193	-	-	-	-
15-49	4,042	-	3,907	-	96.7

Note: The de facto population includes all residents and nonresidents who slept
in the household the night before interview.

Table C.3 Completeness of reporting

Percentage of observations missing information for selected demographic and health questions (weighted), Kyrgyz Republic 1997

Subject	Reference group	Percentage missing information	Number of cases
Birth date	Births in last 15 years		
Month only		0.39	6,276
Month and year		0.00	6,276
Age at death	Deaths to births in last 15 years	0.00	503
Age/date at first union[1]	Ever-married women	0.00	3,021
Respondent's education	All women	0.00	3,848
Child's size at birth	Births in last 35 months	0.97	1,153
Anthropometry[2]	Living children age 0-35 months		
Height missing		6.62	1,104
Weight missing		6.17	1,104
Height or weight missing		6.62	1,104
Diarrhea in last 2 weeks	Living children age 0-35 months	1.12	1,104

[1] Both year and age missing
[2] Child not measured

Table C.4 Births by calendar years

Distribution of births by Western calendar years for living (L), dead (D), and all (T) children, according to reporting completeness, sex ratio at birth, and ratio of births by calendar year, Kyrgyz Republic 1997

	Number of births			Percentage with complete birth date[1]			Sex ratio at birth[2]			Calendar ratio[3]			Male			Female		
Year	L	D	T	L	D	T	L	D	T	L	D	T	L	D	T	L	D	T
95	286	12	298	100.0	100.0	100.0	74.2	122.6	75.8	-	-	-	122	7	128	164	6	169
94	363	23	386	100.0	95.2	99.7	117.3	89.8	115.5	110.1	105.9	109.8	196	11	207	167	12	179
93	375	31	406	100.0	94.0	99.5	111.6	94.3	110.2	100.0	122.4	101.4	198	15	213	177	16	193
92	386	27	414	100.0	92.2	99.5	105.7	298.7	112.5	97.5	90.2	97.0	199	21	219	188	7	195
91	418	30	448	100.0	87.7	99.2	84.0	106.7	85.3	111.6	91.9	110.0	191	15	206	227	14	241
90	362	38	400	100.0	97.1	99.7	86.0	155.8	90.9	89.8	134.9	92.7	167	23	190	195	15	209
89	389	26	415	100.0	100.0	100.0	92.2	244.6	97.7	101.7	84.2	100.3	187	19	205	202	8	210
88	403	24	427	100.0	80.3	98.9	114.6	133.8	115.6	103.9	73.2	101.5	215	14	229	188	10	198
87	387	40	427	100.0	100.0	100.0	136.8	108.5	133.8	100.0	122.7	101.8	224	21	245	164	19	183
86	372	41	413	99.7	96.2	99.4	102.8	71.5	99.2	-	-	-	188	17	205	183	24	207
91-95	1,828	123	1,951	100.0	92.9	99.6	98.0	125.1	99.5	-	-	-	905	69	973	923	55	978
86-90	1,913	170	2,083	99.9	95.6	99.6	105.3	123.1	106.7	-	-	-	981	94	1,075	932	76	1,008
81-85	1,964	201	2,165	100.0	96.7	99.7	104.6	126.8	106.5	-	-	-	1,004	112	1,117	960	89	1,048
76-80	1,310	192	1,502	99.9	90.0	98.6	113.1	147.0	116.9	-	-	-	695	115	810	615	78	692
< 76	1,155	191	1,345	99.8	96.8	99.3	103.4	101.2	103.1	-	-	-	587	96	683	568	95	662
All	8,169	877	9,046	99.9	94.5	99.4	104.4	123.6	106.1	-	-	-	4,172	485	4,657	3,997	392	4,389

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 of births in calendar year x

140

<u>Table C.5 Reporting of age at death in days</u>

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 preceding the survey, Kyrgyz Republic 1997

Age at death (in days)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
<1	11	8	7	8	34
1	18	24	12	6	60
2	6	11	7	5	29
3	8	6	6	7	27
4	5	4	3	3	15
5	1	5	3	5	15
6	0	1	2	0	3
7	7	5	1	0	14
8	0	0	2	0	2
9	0	2	3	0	4
10	0	0	2	2	3
11	0	0	2	2	3
12	0	2	0	1	3
13	0	0	1	0	1
15	0	0	4	1	5
16	0	2	0	2	3
19	2	2	0	0	3
20	3	5	3	5	15
30	0	2	0	2	4
31+	0	0	0	2	2
Total 0-30	61	78	58	48	245
Percent early neonatal[1]	79.7	77.2	69.5	70.7	74.7

[1] (0-6 days/0-30 days) * 100

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 ages under one month, for five-year periods preceding the survey, Kyrgyz Republic 1997

Age at death (in months)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
<1[a]	61	78	58	48	245
1	12	11	14	9	45
2	8	3	10	11	31
3	4	14	18	14	49
4	3	7	11	6	27
5	5	2	9	5	21
6	7	14	18	15	55
7	3	8	6	3	21
8	3	5	10	4	22
9	2	10	10	12	33
10	2	0	4	2	8
11	3	3	1	11	18
12	5	2	5	7	19
13	2	2	1	2	6
14	2	0	1	1	4
15	0	2	0	0	2
17	2	0	0	0	2
18	2	0	3	8	13
20	0	0	1	2	3
24+	2	0	0	2	3
1 year	2	1	0	0	3
Total 0-11	54.4	50.3	34.2	34.9	42.7
Percent neonatal[b]	112	155	168	139	574

[a] Includes deaths under 1 month reported in days
[b] (Under 1 month/under 1 year) * 100

APPENDIX D

SAMPLE IMPLEMENTATION

Table D.1 Sample implementation

Percent distribution of households and eligible women in the DHS sample by results of the interviews and household, eligible women, and overall response rates, according to region and residence, Kyrgyz Republic 1997

	Region				Residence		
Result	Central	Eastern	Northern	Western	Urban	Rural	Total
Selected households							
Completed (C)	96.8	96.9	93.1	96.5	94.9	97.1	96.1
Household present but no competent respondent at home (HP)	0.4	0.0	0.0	0.3	0.3	0.0	0.2
Refused (R)	0.7	0.1	0.7	0.1	0.7	0.1	0.4
Dwelling not found (DNF)	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Household absent (HA)	0.8	0.6	3.4	1.6	1.5	1.4	1.4
Dwelling vacant (DV)	1.3	2.4	2.7	1.4	2.6	1.3	1.9
Dwelling destroyed (DD)							
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	1,112	1,031	668	1,010	1,757	2,064	3,821
Household response rate (HRR)[1]	98.9	99.9	99.2	99.5	98.9	99.8	99.4
Eligible women							
Completed (EWC)	98.2	96.4	99.5	96.0	97.9	97.0	97.3
Not at home (EWNH)	0.3	1.1	0.0	2.8	0.6	1.6	1.2
Refused (EWR)	1.2	0.3	0.0	0.4	0.9	0.2	0.5
Partly completed (EWPC)	0.2	2.2	0.5	0.7	0.5	1.2	0.9
Incapacitated (EWI)	0.0	0.0	0.0	0.1	0.1	0.0	0.0
Other (EWO)							
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	909	1,061	774	1,210	1,517	2,437	3,954
Eligible woman response rate (EWRR)[2]	98.2	96.4	99.5	96.0	97.9	97.0	97.3
Overall response rate (ORR)[3]	97.2	96.3	98.7	95.5	96.8	96.7	96.7

Note: The household response rate is calculated for completed households as a proportion of completed, no competent respondent, refused, and dwelling not found. The eligible woman response rate is calculated for completed interviews as a proportion of completed, not at home, postponed, refused, partially completed, incapacitated and "other." The overall response rate is the product of the household and woman response rates.

[1] Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as

$$\frac{C}{C + HP + R + DNF}$$

[2] Using the number of eligible women falling into specific response categories, the eligible woman response rate (EWRR) is calculated as

$$\frac{EWC}{EWC + EWNH + EWP + EWR + EWPC + EWI + EWO}$$

[3] The overall response rate (ORR) is calculated as

$$ORR = HRR * EWRR$$

APPENDIX E

PERSONS INVOLVED IN THE
1997 KYRGYZ REPUBLIC
DEMOGRAPHIC AND HEALTH SURVEY

APPENDIX E

PERSONS INVOLVED IN THE
1997 KYRGYZ REPUBLIC DEMOGRAPHIC AND HEALTH SURVEY

National Director
Dr. Naken Kasiev

Executive Director
Dr. *Duishe Kudayarov*

Technical Directors
Dr. Talaibek Builashev
Dr. Bermet Jamansarieva

Senior Field Staff
Dr. Beysembay Tulebekov, Field Coordinator
Dr. Sultanali Borbiev, Field Coordinator

Macro International Inc. Staff
Dr. Jeremiah M. Sullivan, Deputy Director for Survey Operations
Dr. Almaz Sharmanov, Health Specialist
Mr. Trevor Croft, Chief of Data Processing
Ms. Thanh Lê, Sampling Statistician
Dr. Kia Weinstein, Consultant
Mr. Mamadou Thiam, Sampling Statistician
Dr. Sidney Moore, Editor
Ms. Celia Siebenmann, Graphics Specialist

Ministry of Health, Kyrgyz Republic
N.K. Kasiev, Minister
T.D. Abdraimov, Deputy Minister
J.A. Doskeeva, Chief, Department of Maternal and Child Health
G.D. Dushenbaeva, Senior Gynecologist
A.K. Kushbakieva, Senior Pediatrician

Chiefs of Oblast Health Departments
N.I. Melnichyk, Bishkek City
S. N. Niyazov, Chuyskaya Oblast
D.J. Risaliev, Oshskaya Oblast
J. O. Omurzakov, Jalal- Abadskaya Oblast
B.A. Akmatbekov, Narynskaya Oblast
D.M. Saalieva, Issyk-Kylskaya Oblast
J.M. Jumabekov, Talasskaya Oblast

Field Staff

APPENDIX F

QUESTIONNAIRES

KYRGYZ REPUBLIC DEMOGRAPHIC AND HEALTH SURVEY QUESTIONNAIRE

HOUSEHOLD SCHEDULE

KYRGYZ REPUBLIC
INSTITUTE OF OBSTETRICS AND PEDIATRICS MINISTRY OF HEALTH

IDENTIFICATION

CITY/TOWN/VILLAGE NAME _____

NAME OF HOUSEHOLD HEAD _____

REGION . . . .

OBLAST . . . .

RAION . . . .

CLUSTER NUMBER . . . .

URBAN/RURAL (urban = 1; rural = 2) . . . .

LARGE CITY/SMALL CITY/TOWN/COUNTRYSIDE . . . .
 (large city = 1, small city = 2, town = 3, countryside = 4)

HOUSEHOLD NUMBER . . . .

THE HOUSEHOLD IS: IN APPARTMENTS BLOCK BUILDING (1) OR IN ALONE STANDING . . . .
 DWELLING UNIT (2)

INTERVIEWER VISIT

	1	2	3	FINAL VISIT
DATE	_____	_____	_____	DAY MONTH YEAR NAME RESULT
INTERVIEWER'S NAME	_____	_____	_____	
RESULT*	_____	_____	_____	
NEXT VISIT: DATE TIME	_____	_____	▓▓▓▓▓	TOTAL NO. VISITS

*RESULT CODES:

1 COMPLETED
2 NO HOUSEHOLD MEMBER AT HOME OR NO
   COMPETENT RESPONDENT AT HOME AT TIME OF VISIT
3 ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD
4 POSTPONED
5 REFUSED
6 DWELLING VACANT OR ADDRESS NOT A DWELLING
7 DWELLING DESTROYED
8 DWELLING NOT FOUND
9
   OTHER _____
          (SPECIFY)

TOTAL IN
HOUSEHOLD

TOTAL
ELIGIBLE
WOMEN

LINE NO. OF
RESP. TO HOUSE-
HOLD SCHEDULE

SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY
NAME _____ ☐☐	NAME _____ ☐☐	☐☐	☐☐
DATE _____	DATE _____		

INFORMATION ABOUT HOUSEHOLD MEMBERS AND VISITORS

Now we would like some information about the people who usually live in your household or who are staying with you now.

184

LINE NO.	USUAL RESIDENTS AND VISITORS	RELA-TIONSHIP TO HEAD OF HOUSE-HOLD*	RESIDENCE		SEX	AGE	NATIONALITY**	EDUCATION			PENSION IF AGE 50 YEARS OR OLDER	PARENTAL SURVIVORSHIP AND RESIDENCE FOR PERSONS LESS THAN 15 YEARS OLD****					ELIGIBILITY
									IF AGE 7 YEARS OR OLDER								
	Please give me the names 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.	What is the re-lation-ship of (NAME) to the head of the house-hold?	Does (NAME) usu-ally live here?	Did (NAME) stay here last night?	Is (NAME) male or fe-male?	How old is (NAME)?	What is (NAME's) nationa-lity?	Has (NAME) ever been to school?	IF ATTENDED SCHOOL		Is (NAME) pen-sioner	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	CIRCLE LINE NUMBER OF WOMEN ELIGIBLE FOR INDIVIDUAL INTERVIEW
									What is the highest level of school (NAME) attended? What is the highest grade (NAME) completed at that level?***	IF AGE LESS THAN 35 YEARS IS (NAME) still in school?						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
01		□□	YES NO 1 2	YES NO 1 2	M F 1 2	IN YEARS □□	□□	YES NO 1 2	LEVEL GRADE □□	YES NO 1 2	YES NO DK 1 2 8	YES NO DK 1 2 8	□□	YES NO DK 1 2 8	□□	01
02		□□	1 2	1 2	1 2	□□	□□	1 2	□□	1 2	1 2 8	1 2 8	□□	1 2 8	□□	02
03		□□	1 2	1 2	1 2	□□	□□	1 2	□□	1 2	1 2 8	1 2 8	□□	1 2 8	□□	03
04		□□	1 2	1 2	1 2	□□	□□	1 2	□□	1 2	1 2 8	1 2 8	□□	1 2 8	□□	04
05		□□	1 2	1 2	1 2	□□	□□	1 2	□□	1 2	1 2 8	1 2 8	□□	1 2 8	□□	05

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
			YES NO	YES NO	M F	IN YEARS		YES NO	LEVEL GRADE	YES NO	YES NO DK	YES NO DK		YES NO DK		
06			1 2	1 2	1 2			1 2		1 2	1 2 8	1 2 8		1 2 8		06
07			1 2	1 2	1 2			1 2		1 2	1 2 8	1 2 8		1 2 8		07
08			1 2	1 2	1 2			1 2		1 2	1 2 8	1 2 8		1 2 8		08
09			1 2	1 2	1 2			1 2		1 2	1 2 8	1 2 8		1 2 8		09
10			1 2	1 2	1 2			1 2		1 2	1 2 8	1 2 8		1 2 8		10
11			1 2	1 2	1 2			1 2		1 2	1 2 8	1 2 8		1 2 8		11
12			1 2	1 2	1 2			1 2		1 2	1 2 8	1 2 8		1 2 8		12

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 (lodgers or friends) who usually live here? YES ⟶ ENTER EACH IN TABLE NO

3) Are there any guests or temporary visitors staying here, or anyone else who slept here last night that have not been listed? YES ⟶ ENTER EACH IN TABLE NO

* CODES FOR Q.3
RELATIONASHIP TO HEAD OF HOUSEHOLD:

01 . HEAD
02 . WIFE OR HUSBAND
03 . SON OR DAUGHTER
04 . SON-IN-LAW OR
      DAUGHTER-IN-LAW
05 . GRANDCHILD
06 . PARENT
07 . PARENT-IN-LAW
08 . BROTHER OR SISTER

09 . CO-WIFE
10 . OTHER RELATIVE
11 . ADOPTED/FOSTER/STEP CHILD
12 . NOT RELATED
98 . DK

** CODES FOR Q.8
NATIONALITY

01 KYRGYZ
02 RUSSIAN
03 UZBEK
04 UKRAINIAN
05 TATAR
06 KAZAK
07 TADZHIK
08 GERMAN
09 AZERBAIDZHAN
10 BYELORUSSIAN
11 ARMENIAN
12 OTHER

*** CODES FOR Q.10
LEVEL OF EDUCATION:

1 . PRIMARY AND SECONDARY
2 . SECONDARY SPECIAL
3 . HIGHER
8 . DK

GRADE

00 . LESS THAN 1 YEAR
         COMPLETED
98 . DK

**** THESE QUESTIONS REFER
TO THE BIOLOGICAL PARENTS
OF THE CHILD.

RECORD 00 IF PARENT NOT
MEMBER OF HOUSEHOLD.

No	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
18	What is the main source of drinking water for members of your household?	PIPED WATER PIPED INTO RESIDENCE/YARD/PLOT..... 11 →20 PUBLIC TAP........................ 12 WELL WATER WELL IN RESIDENCE/YARD/PLOT........ 21 →20 PUBLIC WELL...................... 22 SURFACE WATER SPRING WATER.................... 31 RIVER/STREAM.................... 32 POND/LAKE...................... 33 DAM........................... 34 RAINWATER......................... 41 →20 TANKER TRUCK...................... 51 BOTTLED WATER..................... 61 →20 OTHER _____ 96 (SPECIFY)	
19	How long does it take to go there, get water, and come back?	MINUTES............... □□□ ON PREMISES..................... 996	
20	What kind of toilet facility does your household have?	FLUSH TOILET OWN FLUSH TOILET................. 11 SHARED FLUSH TOILET.............. 12 PIT TOILET/LATRINE TRADITIONAL TYPE................. 21 IMPROVED - VENTILATED............ 22 NO FACILITY (BUSH/FIELD)............ 31 OTHER _____ 96 (SPECIFY)	
21	Does your household have: Electricity? A radio? A television? A telephone? A refrigerator	YES NO ELECTRICITY..................... 1 2 RADIO.......................... 1 2 TELEVISION...................... 1 2 TELEPHONE...................... 1 2 REFRIGERATOR................... 1 2	
22	How many rooms in your household are used for sleeping?	ROOMS....................... □□	
23	MAIN MATERIAL OF THE FLOOR RECORD OBSERVATION	NATURAL FLOOR EARTH/SAND..................... 11 TEZEK......................... 12 RUDIMENTARY FLOOR WOOD PLANKS................... 21 STRAW/SAWDUST................. 22 FINISHED FLOOR PARQUET OR POLISHED WOOD......... 31 LINOLEUM OR ASPHALT.............. 32 CERAMIC TILES................... 33 CEMENT........................ 34 CARPET........................ 35 OTHER _____ 96 (SPECIFY)	
24	Does any member of your household own A bicycle? A motorcycle? A car?	YES NO BICYCLE....................... 1 2 MOTORCYCLE................... 1 2 CAR.......................... 1 2	
25	What type of salt is usually used for cooking in your household? (ASK TO SEE SALT PACKAGE).	LOCAL SALT........................ 01 PACKAGED SALT (IODIZED)............ 02 PACKAGED SALT (NOT IODIZED)......... 03 OTHER _____ 96 (SPECIFY)	
26	Does anybody in your household own dacha, or have access to a garden from which you obtain fruits and vegetables during the growing seasons?	YES............................ 1 NO............................. 2 OTHER _____ 6 (SPECIFY)	
27	Does anybody in your household have animal husbandry?	YES............................ 1 NO............................. 2 OTHER _____ 6 (SPECIFY)	

INDIVIDUAL WOMAN'S QUESTIONNAIRE

KYRGYZ REPUBLIC
INSTITUTE OF OBSTETRICS AND PEDIATRICS MINISTRY OF HEALTH

IDENTIFICATION

CITY/TOWN/VILLAGE NAME _____

NAME OF HOUSEHOLD HEAD _____

REGION . . . .

OBLAST . . . .

RAION . . . .

CLUSTER NUMBER . . . .

URBAN/RURAL (urban = 1; rural = 2) . . . .

LARGE CITY/SMALL CITY/TOWN/COUNTRYSIDE . . . .
(large city = 1, small city = 2, town = 3, countryside = 4)

HOUSEHOLD NUMBER . . . .

NAME AND LINE NUMBER OF WOMAN _____

INTERVIEWER VISIT

	1	2	3	FINAL VISIT
DATE				DAY
				MONTH
				YEAR
				NAME
INTERVIEWER'S NAME				RESULT
RESULT*				
NEXT VISIT: DATE				TOTAL NO. VISITS
TIME				

RESULT CODES:

7 OTHER _____

1 COMPLETED   4 REFUSED   (SPECIFY)
2 NOT AT HOME   5 PARTLY COMPLETED
3 POSTPONED   6 INCAPACITATED

	KYRGYZ	RUSSIAN
1. LANGUAGE OF INTERVIEW	1	2
2. NATIVE LANGUAGE OF RESPONDENT	1	2

	YES	NO
3. WHETHER TRANSLATOR USED	1	2

SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY
NAME _____	NAME _____		
DATE _____	DATE _____		

Section 1. RESPONDENT'S BACKGROUND

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 countryside?	CITY................................. 1 TOWN................................ 2 COUNTRYSIDE........................ 3	
103	How long have you been living continuously in (NAME OF CURRENT PLACE OF RESIDENCE)?	YEARS...................... ☐☐ VISITOR............................. 95 ALWAYS............................. 96 → 105	
104	Just before you moved here, did you live in a city, in a town, or in the countryside?	CITY................................. 1 TOWN................................ 2 COUNTRYSIDE........................ 3	
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?	AGE IN COMPLETED YEARS.......... ☐☐	
107	Have you ever attended school?	YES................................. 1 NO................................. 2 → 114	

188

108	What is the highest level of school you attended: primary, secondary, secondary-special, or higher?	PRIMARY/SECONDARY . . . . 1 ———→ 109 SECONDARY SPECIAL . . . . 2 HIGHER 3
108A	What did you study?	_____ (NAME OF SPECIALITY)
109	How many years/classes/courses did you completed at that level?	

110	CHECK 106: 34 OR BELOW ▢ 35 OR ABOVE ▢ ———————————————→ 114

111	Are you currently attending school?	YES . . . . 1 ———→ 114 NO 2
112	What was the main reason you stopped attending school?	GOT PREGNANT . . . . 01 GOT MARRIED . . . . 02 TO CARE FOR YOUNGER CHILDREN . . . . 03 FAMILY NEEDED HELP AT WORK . . . . 04 NEEDED TO EARN MONEY . . . . 05 HAD ENOUGH SCHOOLING . . . . 06 DID NOT PASS ENTRANCE EXAMS . . . . 07 DID NOT LIKE SCHOOL . . . . 08 SCHOOL IS TOO FAR . . . . 09 OTHER _____ 96 (SPECIFY) DON'T KNOW 98
114	Can you read or understand a letter or newspaper easily, with dificulty, or not at all?	EASILY . . . . 1 WITH DIFFICULTY . . . . 2 NOT AT ALL . . . . 3 ———→ 116

189

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
115	Do you usually read a newspaper or magazine at least once a week?	YES . . . . 1 NO 2	
116	Do you usually listen to the radio every day?	YES . . . . 1 NO 2	
117	Do you usually watch television at least once a week?	YES . . . . 1 NO 2	
118	What is your religion: Are you Muslim, Christian, another religion or do you not practice any religion?	MUSLIM . . . . 1 CHRISTIAN . . . . 2 OTHER _____ 6 (SPECIFY) NOT RELIGIOUS . . . . 7 DON'T KNOW. 8	

119	What is your nationality?
	     Are you Kyrgyz
	     Russian?
	     Kazakh?
	     Uzbek?
	     Other?
		KYRGYZ 1
		 RUSSIAN 2
		 KAZAKH 3
		 UZBEK 4
		 OTHER _____ 6
		 (SPECIFY)
		 DON'T KNOW 8	

119A	What language is easiest for you to read:
	     Only Kyrgyz?
	     Kyrgyz more than Russian?
	     Both equally?
	     Russian more than Kyrgyz?
	     Only Russian?
	     Other language?
		ONLY KYRGYZ 1
		 MORE KYRGYZ THAN RUSSIAN 2
		 SAME KYRGYZ AND RUSSIAN 3
		 MORE RUSSIAN THAN KYRGYZ 4
		 ONLY KYRGYZ 5
		 OTHER _____ 6
		 (SPECIFY)	

190

119B	What language do you usually speak at home: Only Kyrgyz? Kyrgyz more than Russian? Both equally? Russian more than Kyrgyz? Only Kyrgyz? Other language?	ONLY KYRGYZ . . . . 1 MORE KYRGYZ THAN RUSSIAN. . . . . 2 SAME KYRGYZ AND RUSSIAN . . . . 3 MORE RUSSIAN THAN KYRGYZ. . . . . 4 ONLY RUSSIAN . . . . 5 OTHER _____ 6 (SPECIFY)
119D	Do you have any chronic diseases?	YES. . . . . 1 NO. . . . . 2 ———→ 120
119E	What kind of disease do you have?	_____ ☐☐ (NAME OF DISEASE)
119F	Were you treated by the doctor or other medical or non-medical personnel?	DOCTOR . . . . 1 NURSE . . . . 2 OTHER _____ 6 (SPECIFY)
120	CHECK INTERVIEWER'S ASSIGNMENT SHEET: THE WOMAN INTERVIEWED ☐ THE WOMAN INTERVIEWED IS ☐ ————————————→ 201 IS NOT A USUAL RESIDENT A USUAL RESIDENT	
121	Now I would like to ask about the place in which you usually live. What is the name of the place in which you usually live? _____ (NAME OF PLACE) Is that a city, town, or the countryside?	CAPITAL CITY, LARGE CITY . . . . 1 SMALL CITY . . . . 2 TOWN. . . . . 3 COUNTRYSIDE 4

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
122	In which oblast is that located?	<u>OBLAST:</u> CHUISKAYA . . . . 01 ISSYKKULSKAYA . . . . 02 TALASSKAYA . . . . 03 NARYNSKAYA . . . . 04 OSHSKAYA . . . . 05 DZHELALABADSKAYA . . . . 06 THE CITY OF BISHKEK . . . . 07 OTHER _____ 96 SPECIFY	
123	Now I would like to ask about the household in which you usually live. What is the main source of drinking water for members of your household?	PIPED WATER PIPED INTO RESIDENCE/YARD/PLOT . . . . . . 11 PUBLIC TAP . . . . 12 WELL WATER WELL IN RESIDENCE/YARD/PLOT . . . . 21 PUBLIC WELL . . . . 22 SURFACE WATER SPRING WATER . . . . 31 RIVER/STREAM . . . . 32 POND/LAKE . . . . 33 DAM . . . . 34 RAINWATER . . . . 41 TANKER TRUCK . . . . 51 BOTTLED WATER . . . . 61 OTHER _____ 96 (SPECIFY)	11 ──►125 21 ──►125 41 ──►125 61 ──►125

| 124 | How long does it take to go there, get water, and come back? | MINUTES. . . . . □□□ |
| | | ON PREMISES . . . . 996 |

125	What kind of toilet facility does your household have?	FLUSH TOILET
		OWN FLUSH TOILET. 11
		SHARED FLUSH TOILET 12
		PIT TOILET/LATRINE
		TRADITIONAL TYPE. 21
		IMPROVED - VENTILATED 22
		NO FACILITY (BUSH/FIELD) 31
		OTHER _____ 96
		(SPECIFY)

126	Does your household have:		YES	NO
	Electricity?			
	A radio?	ELECTRICITY	1	2
	A television?	RADIO.	1	2
	A telephone?	TELEVISION.	1	2
	A refrigerator	TELEPHONE	1	2
		REFRIGERATOR.	1	2

127	Could you describe the main material of the floor of your home?	NATURAL FLOOR
		EARTH/SAND 11
		TEZEK 12
		RUDIMENTARY FLOOR
		WOOD PLANKS 21
		STRAW/SAWDUST. 22
		FINISHED FLOOR
		PARQUET OR POLISHED WOOD 31
		LINOLEUM OR ASPHALT 32
		CERAMIC TILES 33
		CEMENT 34
		CARPET 35
		OTHER _____ 96
		(SPECIFY)

128	Does any member of your household own		YES	NO
	A bicycle?	BICYCLE	1	2
	A motorcycle?	MOTORCYCLE.	1	2
	A car?	CAR	1	2

Section 2. PREGNANCY   HISTORY

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
201	Now I would like to ask you 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	→208
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 a girl who was born alive but later died? IF NO, PROBE: Any baby who cried or showed signs of life but survived only a few hours or days?	YES . . . . 1 NO. 2	→208

194

207	How many boys have died? How many girls have died?	BOYS DEAD . . . . ▢▢ GIRLS DEAD . . . . ▢▢	
208	SUM ANSWERS TO 203, 205, 207, AND ENTER TOTAL. IF NONE, RECORD '00'	TOTAL BIRTHS . . . . ▢▢	
209	Women sometime have pregnancies which do not result in a live born child. That is, a pregnancy can ended very early by a mini abortion or by an induced abortion, a miscarriage or a stillbirth. In total how many mini abortions, and induced abortions have you had?	TOTAL ABORTIONS. . . . . ▢▢	
210	How many miscarriages?	TOTAL MISCARRIAGES . . . . ▢▢	
211	How many stillbirths?	TOTAL STILLBIRTHS . . . . ▢▢	
212	SUM ANSWERS TO 208, 209, 210, 211, AND ENTER TOTAL. IF NO PREGNANCIES, RECORD '00'	TOTAL PREGNANCIES. . . . . ▢▢	
213	CHECK 212 ONE OR MORE PREGNANCY ▢ NO PREGNANCIES ▢ ————————————————→ 227		

195

214 Now I want to talk to you about each of your pregnacies, including those which ended in a live birth, an induced abortion, a miscarriage, and a stillbirth.
Starting with your last pregnancy, please tell me the following information

215	216	217	218	219	220	221	222	223	224
When did your (last/next-to-last/ etc.) pregnancy end? In what month and year?	Did this pregnancy end in a live birth, an induced abortion, a miscarriage, or a stillbirth?	FROM YEAR OF LAST/NEXT-TO-THE LAST, ETC. PREGNANCY SUBTRACT YEAR OF PREVIOUS PREGNANCY. IS THE DIFFE-RENCE 4 OR MORE? TRY TO DETER-MINE: IF THERE WAS ANOTHER PREGNANCY BETWEEN THIS AND PRE-VIOUS PREG-NANCY.	CHECK 216: RECORD SAME RESPONSE	Was this a single or a multiple birth?	What name was given to this child?	Is (NAME) a boy or girl?	Is (NAME) still alive?	How old was (NAME) on his/ her last birthday? RECORD AGE IN COMPLETED YEARS	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.
01 MONTH. . . . . YEAR . .	LIVE BIRTH . . . . . 1 INDUCED ABORTION . .2 MISCARRIAOE . . . . . 3 STILLBIRTH 4	YES . . . . .1 NO 2	LIVE BIRTH . . . . . . 1 INDUCED ABORTION . 2 MISCARRIAGE . . . . . 3 STILLBIRTH . . . . 4 NEXT PREGNANCY	SING . . . . 1 MULT 2	NAME	BOY . . . . 1 GIRL 2	YES . . . . . 1 NO . . . . . 2 →224	AGE IN YEARS 218	DAYS . . . . .1 MONTHS . . . . . 2 YEARS 3
02 MONTH. . . . . YEAR . .	LIVE BIRTH . . . . . . 1 INDUCED ABORTION . .2 MISCARRIAGE . . . . . 3 STILLBIRTH 4	YES . . . . .1 NO 2	LIVE BIRTH . . . . . . 1 INDUCED ABORTION . 2 MISCARRIAGE . . . . . 3 STILLBIRTH . . . . 4 NEXT PREGNANCY	SING . . . . 1 MULT 2	NAME	BOY . . . . 1 GIRL 2	YES . . . . . 1 NO . . . . . 2 →224	AGE IN YEARS 218	DAYS . . . . .1 MONTHS . . . . . 2 YEARS 3
03 MONTH. . . . . YEAR . .	LIVE BIRTH . . . . . . 1 INDUCED ABORTION . .2 MISCARRIAGE . . . . . 3 STILLBIRTH 4	YES . . . . .1 NO 2	LIVE BIRTH . . . . . . 1 INDUCED ABORTION . 2 MISCARRIAGE . . . . . 3 STILLBIRTH . . . . 4 NEXT PREGNANCY	SING . . . . 1 MULT 2	NAME	BOY . . . . 1 GIRL 2	YES . . . . . 1 NO . . . . . 2 →224	AGE IN YEARS 218	DAYS . . . . .1 MONTHS . . . . . 2 YEARS 3
04 MONTH. . . . . YEAR . .	LIVE BIRTH . . . . . . 1 INDUCED ABORTION . .2 MISCARRIAGE . . . . . 3 STILLBIRTH 4	YES . . . . .1 NO 2	LIVE BIRTH . . . . . . 1 INDUCED ABORTION . 2 MISCARRIAGE . . . . . 3 STILLBIRTH . . . . 4 NEXT PREGNANCY	SING . . . . 1 MULT 2	NAME	BOY . . . . 1 GIRL 2	YES . . . . . 1 NO . . . . . 2 →224	AGE IN YEARS 218	DAYS . . . . .1 MONTHS . . . . . 2 YEARS 3

196

0 5									
MONTH........ YEAR ...	LIVE BIRTH .... 1 INDUCED ABORTION . .2 MISCARRIAGE . . . . . .3 STILLBIRTH 4	YES . . . . .1 NO 2	LIVE BIRTH . . . . 1 INDUCED ABORTION . 2 MISCARRIAGE . . . . . 3 STILLBIRTH . . . . 4 NEXT PREGNANCY	SING . . . . 1 MULT 2	NAME	BOY . . . . 1 GIRL 2	YES . . . . . 1 NO 2 224	AGE IN YEARS 218	DAYS . . . . .1 MONTHS . . . . . 2 YEARS 3
0 6									
MONTH... YEAR ..	LIVE BIRTH . . . . 1 INDUCED ABORTION . .2 MISCARRIAGE . . . . . .3 STILLBIRTH 4	YES . . . . .1 NO 2	LIVE BIRTH . . . . 1 INDUCED ABORTION . 2 MISCARRIAGE . . . . . .3 STILLBIRTH . . . . 4 NEXT PREGNANCY	SING . . . . 1 MULT 2	NAME	BOY . . . . 1 GIRL 2	YES . . . . . 1 NO 2 224	AGE IN YEARS 218	DAYS . . . . .1 MONTHS . . . . . 2 YEARS 3
0 7									
MONTH........ YEAR ..	LIVE BIRTH . . . . 1 INDUCED ABORTION . .2 MISCARRIAGE . . . . . .3 STILLBIRTH 4	YES . . . . .1 NO 2	LIVE BIRTH . . . . 1 INDUCED ABORTION . 2 MISCARRIAGE . . . . . .3 STILLBIRTH . . . . 4 NEXT PREGNANCY	SING . . . . 1 MULT 2	NAME	BOY . . . . 1 GIRL 2	YES . . . . . 1 NO 2 224	AGE IN YEARS 218	DAYS . . . . .1 MONTHS . . . . . 2 YEARS 3
0 8									
MONTH........ YEAR ...	LIVE BIRTH . . . . 1 INDUCED ABORTION . .2 MISCARRIAGE . . . . . .3 STILLBIRTH 4	YES . . . . .1 NO 2	LIVE BIRTH . . . . 1 INDUCED ABORTION . 2 MISCARRIAGE . . . . . .3 STILLBIRTH . . . . 4 NEXT PREGNANCY	SING . . . . 1 MULT 2	NAME	BOY . . . . 1 GIRL 2	YES . . . . . 1 NO 2 224	AGE IN YEARS 218	DAYS . . . . .1 MONTHS . . . . . 2 YEARS 3
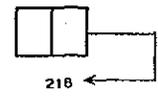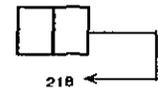
197

09	MONTH.	LIVE BIRTH . . . . 1 INDUCED ABORTION . 2 MISCARRIAGE . . . . . . 3 STILLBIRTH 4	YES . . . . 1 NO 2	LIVE BIRTH . . . . 1 INDUCED ABORTION . 2 MISCARRIAGE . . . . . . 3 STILLBIRTH . . . . 4 NEXT PREGNANCY ◄	SING . . . . 1 MULT 2	NAME	BOY . . . . 1 GIRL 2	YES . . . . . 1 NO . . . . . 2 ►224	AGE IN YEARS 218 ◄	DAYS . . . . 1 MONTHS . . . . . 2 YEARS 3
YEAR . .										
10	MONTH.	LIVE BIRTH . . . . 1 INDUCED ABORTION . 2 MISCARRIAGE . . . . . . 3 STILLBIRTH 4	YES . . . . 1 NO 2	LIVE BIRTH . . . . 1 INDUCED ABORTION . 2 MISCARRIAGE . . . . . . 3 STILLBIRTH . . . . 4 NEXT PREGNANCY ◄	SING . . . . 1 MULT 2	NAME	BOY . . . . 1 GIRL 2	YES . . . . . 1 NO . . . . . 2 ►224	AGE IN YEARS 218 ◄	DAYS . . . . 1 MONTHS . . . . . 2 YEARS 3
YEAR . .										
11	MONTH.	LIVE BIRTH . . . . 1 INDUCED ABORTION . 2 MISCARRIAGE . . . . . . 3 STILLBIRTH 4	YES . . . . 1 NO 2	LIVE BIRTH . . . . 1 INDUCED ABORTION . 2 MISCARRIAGE . . . . . . 3 STILLBIRTH . . . . 4 NEXT PREGNANCY ◄	SING . . . . 1 MULT 2	NAME	BOY . . . . 1 GIRL 2	YES . . . . . 1 NO . . . . . 2 ►224	AGE IN YEARS 218 ◄	DAYS . . . . 1 MONTHS . . . . . 2 YEARS 3
YEAR . .										
12	MONTH.	LIVE BIRTH . . . . 1 INDUCED ABORTION . 2 MISCARRIAGE . . . . . . 3 STILLBIRTH 4	YES . . . . 1 NO 2	LIVE BIRTH . . . . 1 INDUCED ABORTION . 2 MISCARRIAGE . . . . . . 3 STILLBIRTH . . . . 4 NEXT PREGNANCY ◄	SING . . . . 1 MULT 2	NAME	BOY . . . . 1 GIRL 2	YES . . . . . 1 NO . . . . . 2 ►224	AGE IN YEARS 218 ◄	DAYS . . . . 1 MONTHS . . . . . 2 YEARS 3
YEAR . .										

13 MONTH ___ [ ][ ][ ] YEAR ..	LIVE BIRTH .... 1 INDUCED ABORTION . 2 MISCARRIAGE ..... 3 STILLBIRTH 4	YES .... 1 NO 2	LIVE BIRTH .... 1 INDUCED ABORTION . 2 MISCARRIAGE ..... 3 STILLBIRTH .... 4 NEXT PREGNANCY ←	SING .... 1 MULT 2	NAME _____	BOY .... 1 GIRL 2	YES ..... 1 NO ..... 2 →224	AGE IN YEARS [ ][ ] 218 ←	DAYS .... 1 MONTHS ..... 2 YEARS ...... 3 [ ][ ][ ]
14 MONTH ___ [ ][ ][ ] YEAR ..	LIVE BIRTH .... 1 INDUCED ABORTION . 2 MISCARRIAGE ..... 3 STILLBIRTH 4	YES .... 1 NO 2	LIVE BIRTH .... 1 INDUCED ABORTION . 2 MISCARRIAGE ..... 3 STILLBIRTH .... 4 NEXT PREGNANCY ←	SING .... 1 MULT 2	NAME _____	BOY .... 1 GIRL 2	YES ..... 1 NO ..... 2 →224	AGE IN YEARS [ ][ ] 218 ←	DAYS .... 1 MONTHS ..... 2 YEARS ...... 3 [ ][ ][ ]
15 MONTH ___ [ ][ ][ ] YEAR ..	LIVE BIRTH .... 1 INDUCED ABORTION . 2 MISCARRIAGE ..... 3 STILLBIRTH 4	YES .... 1 NO 2	LIVE BIRTH .... 1 INDUCED ABORTION . 2 MISCARRIAGE ..... 3 STILLBIRTH .... 4 NEXT PREGNANCY ←	SING .... 1 MULT 2	NAME _____	BOY .... 1 GIRL 2	YES ..... 1 NO ..... 2 →224	AGE IN YEARS [ ][ ] 218 ←	DAYS .... 1 MONTHS ..... 2 YEARS ...... 3 [ ][ ][ ]
16 MONTH ___ [ ][ ][ ] YEAR ..	LIVE BIRTH .... 1 INDUCED ABORTION . 2 MISCARRIAGE ..... 3 STILLBIRTH 4	YES .... 1 NO 2	LIVE BIRTH .... 1 INDUCED ABORTION . 2 MISCARRIAGE ..... 3 STILLBIRTH .... 4 NEXT PREGNANCY ←	SING .... 1 MULT 2	NAME _____	BOY .... 1 GIRL 2	YES ..... 1 NO ..... 2 →224	AGE IN YEARS [ ][ ] 218 ←	DAYS .... 1 MONTHS ..... 2 YEARS ...... 3 [ ][ ][ ]

225 CAMPARE 212 WITH TOTAL PREGNANCIES IN PREGNANCY HISTORY IN QUESTION 215:

NUMBERS ARE THE SAME [ ]   NUMBERS ARE DIFFERENT [ ] —————→ (PROBE AND RECONCILE)

CHECK: Q215   FOR EACH PREGNANCY: YEAR OF PREGNANCY ENDED IS RECORDED.

Q223   FOR EACH LIVING CHILD: CURRENT AGE IS RECORDED.

Q224   FOR AGE AT DEATH 12 MONTHS OR 1 YEAR: PROBE TO DETERMINE EXACT NUMBER OF MONTHS.

226   CHECK 215 AND ENTER THE NUMBER OF PREGNANCIES ENDED SINCE JANUARY 1994.
IF NONE, RECORD '0'.   [ ]

No	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
227	Are you pregnant now?	YES . . . . 1 NO. . . . . 2 UNSURE 8	→ 229A
228	How many months pregnant are you? **RECORD NUMBER OF COMPLETED MONTHS**	MONTHS . . . . ☐☐	
229	At the time you became pregnant, did you want to become pregnant then, did you want to wait until later, or did you not want to become pregnant at all?	THEN . . . . 1 LATER . . . . 2 NOT AT ALL 3	
229A	At what age did you have your first menstrual period?	MONTHS . . . . ☐☐ NEVER MENSTRUATED. . . . . 96 DON'T KNOW. 98	→ 231
230	When did your last menstrual period start? ——————————————— (DATE, IF GIVEN)	DAYS AGO . . . . 1 ☐☐ WEEKS AGO . . . . 2 MONTHS AGO . . . . 3 YEARS AGO . . . . 4 IN MENOPAUSE . . . . 994 BEFORE LAST BIRTH . . . . 995 NEVER MENSTRUATED 996	
230 A	For how many days your menstrual cycle lasts?	DAYS . . . . ☐☐	
230B	Is the time between your menstrual cycle regular or irregular?	REGULAR . . . . 1 IRREGULAR 2	

200

230 C	For how many days your menstruations usually last?	DAYS . . . . [ ][ ]	
230D	Are your menstrual flows usually light, heavy or normal?	LIGHT . . . . 1 NORMAL . . . . 2 HEAVY 3	
230E	Do your menstruations usually occur without any pain, with little pain, or very painful?	WITHOUT PAIN . . . . 1 WITH LITTLE PAIN . . . . 2 VERY PAINFUL 3	
231	Between the first day of a woman's period and the first day of her next period, are there certain times when she has a greater chance of becoming pregnant then other times?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	→301
232	During which times of the monthly cycle does a woman have the greatest chance of becoming pregnant?	DURING HER PERIOD . . . . 01 RIGHT AFTER HER PERIOD HAS ENDED . . . 02 IN THE MIDDLE OF THE CYCLE . . . . 03 JUST BEFORE HER PERIOD BEGINS . . . . . 04 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	

Section 3. OUTCOME OF PREGNANCIES

301	CHECK 226			
	ONE OR MORE PREGNANCY SINCE JANUARY 1994 ☐		NO PREGNANCY SINCE JANUARY 1994 ☐ ————————————→ (SKIP TO 458)	

302	ENTER THE LINE NUMBER FOR EACH PREGNANCY ENDED SINCE JANUARY 1994 IN THE TABLE. (IF THERE ARE MORE THAN FOUR PREGNANCIES, USE ADDITIONAL QUESTIONNAIRE)
	Now I would like to ask you some questions about the pregnancies you have had in the last three years.

		LAST PREGNANCY	NEXT-TO-THE-LAST PREGNANCY	NEXT-TO-NEXT-TO THE LAST PREGN.	NEXT-TO-NEXT-TO-NEXT-TO THE LAST PREG
303	LINE NUMBER FROM Q. 215	LINE NUMBER. . . . . ☐☐	LINE NUMBER. . . . . ☐☐	LINE NUMBER. . . . . ☐☐	LINE NUMBER. . . . . ☐☐
304	SEE Q. 216 AND 220: OUTCOME OF PREGNANCY OR THE NAME OF CHILD.	OUTCOME OR NAME _____	OUTCOME OR NAME _____	OUTCOME OR NAME _____	OUTCOME OR NAME _____
304A	When during your pregnancy did you learn that you were pregnant?	DAYS . . . . 1 ☐☐ WEEKS . . . . 2 ☐☐ MONTHS. . . . . 3 ☐☐ DON'T KNOW. 998	DAYS . . . . 1 ☐☐ WEEKS . . . . 2 ☐☐ MONTHS. . . . . 3 ☐☐ DON'T KNOW. 998	DAYS . . . . 1 ☐☐ WEEKS . . . . 2 ☐☐ MONTHS. . . . . 3 ☐☐ DON'T KNOW. 998	DAYS . . . . 1 ☐☐ WEEKS . . . . 2 ☐☐ MONTHS. . . . . 3 ☐☐ DON'T KNOW. 998
305	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 want no (more) children at all?	THEN . . . . 1 (SKIP TO 306A) ← LATER . . . . 2 NO MORE. . . . . 3 (SKIP TO 306A) ←	THEN . . . . 1 (SKIP TO 306A) ← LATER . . . . 2 NO MORE. . . . . 3 (SKIP TO 306A) ←	THEN . . . . 1 (SKIP TO 306A) ← LATER . . . . 2 NO MORE. . . . . 3 (SKIP TO 306A) ←	THEN . . . . 1 (SKIP TO 306A) ← LATER . . . . 2 NO MORE. . . . . 3 (SKIP TO 306A) ←
305A	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	MONTHS . . . . 1 ☐☐ YEARS . . . . 2 DON'T KNOW. 998	MONTHS . . . . 1 ☐☐ YEARS . . . . 2 DON'T KNOW. 998
306	At the time you became pregnant, were you using a method of contraception? Which method?	YES . . . . 1 NO . . . . 2 ☐☐	YES . . . . 1 NO . . . . 2 ☐☐	YES . . . . 1 NO . . . . 2 ☐☐	YES . . . . 1 NO . . . . 2 ☐☐
306A	CHECK 304: OUTCOME OF PREGNANCY	INDUCED ABORTION. . . . ☐ →315A MISCARRIAGE . . . . ☐ →325 STILLBIRTH . . . . ☐ LIVE BIRTH . . . . ☐	INDUCED ABORTION. . . . . . ☐ →315A MISCARRIAGE . . . . ☐ →325 STILLBIRTH . . . . ☐ LIVE BIRTH . . . . ☐	INDUCED ABORTION. . . . . . ☐ →315A MISCARRIAGE . . . . ☐ →325 STILLBIRTH . . . . ☐ LIVE BIRTH . . . . ☐	INDUCED ABORTION. . . . . . ☐ →315A MISCARRIAGE . . . . ☐ →325 STILLBIRTH . . . . ☐ LIVE BIRTH . . . . ☐

307	When you were pregnant (with NAME), did you see anyone for antenatal care for this pregnancy? IF YES: Whom did you see? Anyone else? PROBE FOR THE TYPE OF PERSONS PROVIDED ANTENATAL CARE	HEALTH PROFESSIONAL DOCTOR . . . . A NURSE/MIDWIFE . . . . B NONMEDICAL PERSONS TRADITIONAL BIRTH . . . . C REALTIVE/FRIEND . . . . D OTHER _____ X (SPECIFY) NO ONE . . . . Y (SKIP TO 312)	HEALTH PROFESSIONAL DOCTOR . . . . A NURSE/MIDWIFE . . . . B NONMEDICAL PERSONS TRADITIONAL BIRTH . . . . C REALTIVE/FRIEND . . . . D OTHER _____ X (SPECIFY) NO ONE . . . . Y (SKIP TO 312)	HEALTH PROFESSIONAL DOCTOR . . . . A NURSE/MIDWIFE . . . . B NONMEDICAL PERSONS TRADITIONAL BIRTH . . . . C REALTIVE/FRIEND . . . . D OTHER _____ X (SPECIFY) NO ONE . . . . Y (SKIP TO 312)	HEALTH PROFESSIONAL DOCTOR . . . . A NURSE/MIDWIFE . . . . B NONMEDICAL PERSONS TRADITIONAL BIRTH . . . . C REALTIVE/FRIEND . . . . D OTHER _____ X (SPECIFY) NO ONE . . . . Y (SKIP TO 312)
308	How many months pregnant were you when you first received antenatal care?	MONTHS . . . . [ ][ ] DON'T KNOW 98	MONTHS . . . . [ ][ ] DON'T KNOW 98	MONTHS . . . . [ ][ ] DON'T KNOW 98	MONTHS . . . . [ ][ ] DON'T KNOW 98
309	How many times did you receive antenatal care during this pregnancy?	NUMBER . . . . [ ][ ] DON'T KNOW 98	NUMBER . . . . [ ][ ] DON'T KNOW 98	NUMBER . . . . [ ][ ] DON'T KNOW 98	NUMBER . . . . [ ][ ] DON'T KNOW 98
312	Where did the (birth of NAME)/ pregnancy termination) take place?	HOME RESPONDENT'S HOME . . . . 11 OTHER HOME . . . . 12 IN THE HEALTH FACILITY OBGYN HOSPITAL . . . . 21 HOSPITAL . . . . 22 DOCTOR'S ASSISTANT/MIDWIFE POST (FAP) . . . . 23 OTHER HEALTH FACILITY _____ 26 (SPECIFY) OTHER _____ 96 (SPECIFY)	HOME RESPONDENT'S HOME . . . . 11 OTHER HOME . . . . 12 IN THE HEALTH FACILITY OBGYN HOSPITAL . . . . 21 HOSPITAL . . . . 22 DOCTOR'S ASSISTANT/MIDWIFE POST (FAP) . . . . 23 OTHER HEALTH FACILITY _____ 26 (SPECIFY) OTHER _____ 96 (SPECIFY)	HOME RESPONDENT'S HOME . . . . 11 OTHER HOME . . . . 12 IN THE HEALTH FACILITY OBGYN HOSPITAL . . . . 21 HOSPITAL . . . . 22 DOCTOR'S ASSISTANT/MIDWIFE POST (FAP) . . . . 23 OTHER HEALTH FACILITY _____ 26 (SPECIFY) OTHER _____ 96 (SPECIFY)	HOME RESPONDENT'S HOME . . . . 11 OTHER HOME . . . . 12 IN THE HEALTH FACILITY OBGYN HOSPITAL . . . . 21 HOSPITAL . . . . 22 DOCTOR'S ASSISTANT/MIDWIFE POST (FAP) . . . . 23 OTHER HEALTH FACILITY _____ 26 (SPECIFY) OTHER _____ 96 (SPECIFY)

		LAST PREGNANCY OUTCOME OR NAME	NEXT-TO-THE-LAST PREGNANCY OUTCOME OR NAME	NEXT-TO-NEXT-TO THE LAST PREGN. OUTCOME OR NAME	NEXT-TO-NEXT-TO-NEXT-TO LAST PREG. OUTCOME OR NAME
313	Who assisted with the (delivery of (NAME)/ pregnancy termination? Anyone else?	HEALTH PROFESSIONAL DOCTOR . . . . A NURSE/MIDWIFE. . . . . B NON MEDICAL PERSON TRADITIONAL MIDWIFE. . . . . C RELATIVE/FRIEND . . . . D OTHER PERSON_____ X (SPECIFY) NO ONE. Y	HEALTH PROFESSIONAL DOCTOR . . . . A NURSE/MIDWIFE. . . . . B NON MEDICAL PERSON TRADITIONAL MIDWIFE. . . . . C RELATIVE/FRIEND . . . . D OTHER PERSON_____ X (SPECIFY) NO ONE. Y	HEALTH PROFESSIONAL DOCTOR . . . . A NURSE/MIDWIFE. . . . . B NON MEDICAL PERSON TRADITIONAL MIDWIFE. . . . . C RELATIVE/FRIEND . . . . D OTHER PERSON_____ X (SPECIFY) NO ONE. Y	HEALTH PROFESSIONAL DOCTOR . . . . A NURSE/MIDWIFE. . . . . B NON MEDICAL PERSON TRADITIONAL MIDWIFE. . . . . C RELATIVE/FRIEND . . . . D OTHER PERSON_____ X (SPECIFY) NO ONE. Y

314	At the time of the (birth of (NAME)/ ending of the pregnancy), did you have any of the following problems:
	
	Long labor, that is, did your regular contractions last more than 18 hours?
	
	Excessive bleeding that was so much that you feared it was life threatening?
	
	A high fever with bad smelling vaginal discharge?
	
	Convulsions not caused by fever?
	
	Early rupture of amniotic fluid sac?
		YES NO
		LONG LABOR 1 2
		
		BLEEDING 1 2
		
		FEVER/BAD SMELLING. 1 2
		
		CONVULSIONS 1 2
		EARLY RUPTURE OF AMNIOTIC
		    FLUID SAC 1 2
			YES NO
			LONG LABOR 1 2
			
			BLEEDING 1 2
			
			FEVER/BAD SMELLING. 1 2
			
			CONVULSIONS 1 2
			EARLY RUPTURE OF AMNIOTIC
			    FLUID SAC 1 2
				YES NO
				LONG LABOR 1 2
				
				BLEEDING 1 2
				
				FEVER/BAD SMELLING. 1 2
				
				CONVULSIONS 1 2
				EARLY RUPTURE OF AMNIOTIC
				    FLUID SAC 1 2
					YES NO
					LONG LABOR 1 2
					
					BLEEDING 1 2
					
					FEVER/BAD SMELLING. 1 2
					
					CONVULSIONS 1 2
					EARLY RUPTURE OF AMNIOTIC
					    FLUID SAC 1 2

315	Was the (birth of (NAME)/pregnancy termination) by caesarian section?	YES....................1 NO......................2 325 ◄—	YES....................1 NO......................2 325 ◄—	YES....................1 NO......................2 325 ◄—	YES....................1 NO......................2 325 ◄—
315A	How did you determine you were pregnant?	SAW A DOCTOR...............1 CONDUCTED SELF PREGN TEST...2 DECIDED MYSELF BECAUSE OF MISSED PERIOD.......3 OTHER _____ 6 (SPECIFY)	SAW A DOCTOR...............1 CONDUCTED SELF PREGN TEST...2 DECIDED MYSELF BECAUSE OF MISSED PERIOD.......3 OTHER _____ 6 (SPECIFY)	SAW A DOCTOR...............1 CONDUCTED SELF PREGN TEST...2 DECIDED MYSELF BECAUSE OF MISSED PERIOD.......3 OTHER _____ 6 (SPECIFY)	SAW A DOCTOR...............1 CONDUCTED SELF PREGN TEST...2 DECIDED MYSELF BECAUSE OF MISSED PERIOD.......3 OTHER _____ 6 (SPECIFY)
315B	Who suggested that you might have an abortion?	HEALTH PREFESSIONAL.........1 HUSBAND..................2 MOTHER/MOTHER-IN-LAW......3 FRIENDS/RELATIVES...........4 DECIDED HERSELF...........5 OTHER _____ 6 (SPECIFY) DON'T KNOW.................8	HEALTH PREFESSIONAL.........1 HUSBAND..................2 MOTHER/MOTHER-IN-LAW......3 FRIENDS/RELATIVES...........4 DECIDED HERSELF...........5 OTHER _____ 6 (SPECIFY) DON'T KNOW.................8	HEALTH PREFESSIONAL.........1 HUSBAND..................2 MOTHER/MOTHER-IN-LAW......3 FRIENDS/RELATIVES...........4 DECIDED HERSELF...........5 OTHER _____ 6 (SPECIFY) DON'T KNOW.................8	HEALTH PREFESSIONAL.........1 HUSBAND..................2 MOTHER/MOTHER-IN-LAW......3 FRIENDS/RELATIVES...........4 DECIDED HERSELF...........5 OTHER _____ 6 (SPECIFY) DON'T KNOW.................8
316	Where was the induced abortion performed?	PUBLIC SECTOR HOSPITAL..................11 POLYCLINIC................12 AMBULATORY...............13 MOBILE CLINIC.............14 OTHER HEALTH CARE FACILITY_____ 16 (SPECIFY) PRIVATE SECTOR PRIVATE CLINIC.............21 PRIVATE DOCTOR...........22 OTHER PRIVATE HEALTH CARE FACILITY_____ 26 (SPECIFY) PRIVATE PERSON (NON MEDICAL)..31 OTHER _____ 96 (SPECIFY)	PUBLIC SECTOR HOSPITAL..................11 POLYCLINIC................12 AMBULATORY...............13 MOBILE CLINIC.............14 OTHER HEALTH CARE FACILITY_____ 16 (SPECIFY) PRIVATE SECTOR PRIVATE CLINIC.............21 PRIVATE DOCTOR...........22 OTHER PRIVATE HEALTH CARE FACILITY_____ 26 (SPECIFY) PRIVATE PERSON (NON MEDICAL)..31 OTHER _____ 96 (SPECIFY)	PUBLIC SECTOR HOSPITAL..................11 POLYCLINIC................12 AMBULATORY...............13 MOBILE CLINIC.............14 OTHER HEALTH CARE FACILITY_____ 16 (SPECIFY) PRIVATE SECTOR PRIVATE CLINIC.............21 PRIVATE DOCTOR...........22 OTHER PRIVATE HEALTH CARE FACILITY_____ 26 (SPECIFY) PRIVATE PERSON (NON MEDICAL)..31 OTHER _____ 96 (SPECIFY)	PUBLIC SECTOR HOSPITAL..................11 POLYCLINIC................12 AMBULATORY...............13 MOBILE CLINIC.............14 OTHER HEALTH CARE FACILITY_____ 16 (SPECIFY) PRIVATE SECTOR PRIVATE CLINIC.............21 PRIVATE DOCTOR...........22 OTHER PRIVATE HEALTH CARE FACILITY_____ 26 (SPECIFY) PRIVATE PERSON (NON MEDICAL)..31 OTHER _____ 96 (SPECIFY)
317	Can you tell me what procedure was used to terminate the pregnancy?	D & C.....................1 ASPIRATION.................2 CAESARIAN SECTION..........3 TRADITIONAL METHOD.........4 OTHER _____ 6 (SPECIFY) DON'T KNOW...............8	D & C.....................1 ASPIRATION.................2 CAESARIAN SECTION..........3 TRADITIONAL METHOD.........4 OTHER _____ 6 (SPECIFY) DON'T KNOW...............8	D & C.....................1 ASPIRATION.................2 CAESARIAN SECTION..........3 TRADITIONAL METHOD.........4 OTHER _____ 6 (SPECIFY) DON'T KNOW...............8	D & C.....................1 ASPIRATION.................2 CAESARIAN SECTION..........3 TRADITIONAL METHOD.........4 OTHER _____ 6 (SPECIFY) DON'T KNOW...............8

		LAST PREGNANCY OUTCOME OR NAME ___	NEXT-TO-THE-LAST PREGNANCY OUTCOME OR NAME ___	NEXT-TO-NEXT-TO THE LAST PREGN. OUTCOME OR NAME ___	NEXT-TO-NEXT-TO-NEXT-TO LAST PREG. OUTCOME OR NAME ___
318	Who helped you to perform that procedure?	DOCTOR .... A NURSE/MIDWIFE .... B TRADITIONAL MIDWIFE......... C OTHER PERSON _____ X (SPECIFY) NO ONE .... Y	DOCTOR .... A NURSE/MIDWIFE .... B TRADITIONAL MIDWIFE......... C OTHER PERSON _____ X (SPECIFY) NO ONE .... Y	DOCTOR .... A NURSE/MIDWIFE .... B TRADITIONAL MIDWIFE......... C OTHER PERSON _____ X (SPECIFY) NO ONE .... Y	DOCTOR .... A NURSE/MIDWIFE .... B TRADITIONAL MIDWIFE......... C OTHER PERSON _____ X (SPECIFY) NO ONE .... Y.
318A	How much did it cost?	COST ...... ☐☐☐☐ FREE. ....9996 DON'T KNOW 9998	COST ...... ☐☐☐☐ FREE. ....9996 DON'T KNOW 9998	COST ...... ☐☐☐☐ FREE. ....9996 DON'T KNOW 9998	COST ...... ☐☐☐☐ FREE. ....9996 DON'T KNOW 9998
319	Sometimes, a woman has health problems after an induced abortion. Did you have any health problems afterwards?	YES.....................1 NO.....................2 ⌐ DON'T KNOW.............8 ⌐ 325 ◄	YES.....................1 NO.....................2 ⌐ DON'T KNOW.............8 ⌐ 325 ◄	YES.....................1 NO.....................2 ⌐ DON'T KNOW.............8 ⌐ 325 ◄	YES.....................1 NO.....................2 ⌐ DON'T KNOW.............8 ⌐ 325 ◄
320	What health problems did you have: sterility? infection? lack of menstruation? irregular bleeding? other?	PELVIC PAIN ....A STERILITY ....B INFECTION ....C LACK OF MENSTRUATION ....D IRREGULAR BLEEDING ....E OTHER _____ X (SPECIFY) DON'T KNOW................Y	PELVIC PAIN ....A STERILITY ....B INFECTION ....C LACK OF MENSTRUATION ....D IRREGULAR BLEEDING ....E OTHER _____ X (SPECIFY) DON'T KNOW................Y	PELVIC PAIN ....A STERILITY ....B INFECTION ....C LACK OF MENSTRUATION ....D IRREGULAR BLEEDING ....E OTHER _____ X (SPECIFY) DON'T KNOW................Y	PELVIC PAIN ....A STERILITY ....B INFECTION ....C LACK OF MENSTRUATION ....D IRREGULAR BLEEDING ....E OTHER _____ X (SPECIFY) DON'T KNOW................Y
321	Did you seek care because of these complications?	YES.....................1 NO.....................2 325 ◄	YES.....................1 NO.....................2 325 ◄	YES.....................1 NO.....................2 325 ◄	YES.....................1 NO.....................2 325 ◄

206

322	Where did you seek care?	PUBLIC SECTOR HOSPITAL.................. A POLYCLINIC.............. B AMBULATORY............. MOBILE CLINIC............. C OTHER HEALTH CARE D FACILITY E ———————— (SPECIFY) PRIVATE SECTOR PRIVATE CLINIC............F PRIVATE DOCTOR............G OTHER PRIVATE HEALTH CARE FACILITY ————————H (SPECIFY) PRIVATE PERSON (NON MEDICAL)..I OTHER ————————K (SPECIFY)	PUBLIC SECTOR HOSPITAL.................. A POLYCLINIC.............. B AMBULATORY............. MOBILE CLINIC............. C OTHER HEALTH CARE D FACILITY E ———————— (SPECIFY) PRIVATE SECTOR PRIVATE CLINIC............F PRIVATE DOCTOR............G OTHER PRIVATE HEALTH CARE FACILITY ————————H (SPECIFY) PRIVATE PERSON (NON MEDICAL)..I OTHER ————————K (SPECIFY)	PUBLIC SECTOR HOSPITAL.................. A POLYCLINIC.............. B AMBULATORY............. MOBILE CLINIC............. C OTHER HEALTH CARE D FACILITY E ———————— (SPECIFY) PRIVATE SECTOR PRIVATE CLINIC............F PRIVATE DOCTOR............G OTHER PRIVATE HEALTH CARE FACILITY ————————H (SPECIFY) PRIVATE PERSON (NON MEDICAL)..I OTHER ————————K (SPECIFY)	PUBLIC SECTOR HOSPITAL.................. A POLYCLINIC.............. B AMBULATORY............. MOBILE CLINIC............. C OTHER HEALTH CARE D FACILITY E ———————— (SPECIFY) PRIVATE SECTOR PRIVATE CLINIC............F PRIVATE DOCTOR............G OTHER PRIVATE HEALTH CARE FACILITY ————————H (SPECIFY) PRIVATE PERSON (NON MEDICAL)..I OTHER ————————K (SPECIFY)
323	Have you been hospitalized because of these problems?	YES.....................1 NO ....2 325 ←	YES.....................1 NO ....2 325 ←	YES.....................1 NO ....2 325 ←	YES.....................1 NO ....2 325 ←
324	How many days?	NUMBER.............. □□ DON'T KNOW..............98	NUMBER.............. □□ DON'T KNOW..............98	NUMBER.............. □□ DON'T KNOW..............98	NUMBER.............. □□ DON'T KNOW..............98
325		GO BACK TO Q. 305 IN NEXT COLUMN. IF NO MORE PREGNANCY, GO TO Q.401	GO BACK TO Q. 305 IN NEXT COLUMN. IF NO MORE PREGNANCY, GO TO Q.401	GO BACK TO Q. 305 IN NEXT COLUMN. IF NO MORE PREGNANCY, GO TO Q.401	GO BACK TO Q. 305 IN NEXT COLUMN. IF NO MORE PREGNANCY, GO TO Q.401

Section 4A. CHILD HEALTH AND NUTRITION PRACTICES

401	CHECK 306A:		

ONE OR MORE LIVE BIRTHS SINCE JANUARY 1994 ☐

NO LIVE BIRTHS SINCE JANUARY 1994 ☐ ⟶ (SKIP TO 458)

402	CHECK 303 AND 306A: ENTER THE LINE NUMBER FOR EACH LIVE BIRTH. ASK THE QUESTIONS ABOUT EACH OF THESE BIRTHS BEGINNING WITH THE LAST BIRTH. (IF THERE ARE MORE THAN 2 BIRTHS, USE ADDITIONAL QUESTIONNAIRE).

Now I would like to ask you some questions about your children born in the past three years. Let's talk about one child at a time.

403	LINE NUMBER FROM 303	LAST BIRTH LINE NUMBER . . . . ☐☐	NEXT-TO-LAST BIRTH LINE NUMBER . . . . ☐☐
404	NAME FROM 304	NAME ____	NAME ____

404A	During your pregnancy with (NAME), did you have any of the following diseases?		LAST BIRTH		NEXT-TO-LAST BIRTH
			YES	NO	YES	NO
	Anemia		1	2	1	2
	Heart or circulatory diseases		1	2	1	2
	Kidney diseases		1	2	1	2
	Liver or gastrointestinal diseases		1	2	1	2
	Lung diseases		1	2	1	2
	Hormonal diseases		1	2	1	2

404B	CHECK 404A: ONE OR MORE RESPONSES "YES"	YES . . . . 1 NO . . . . 2 (SKIP TO 405) ⟵	YES . . . . 1 NO . . . . 2 (SKIP TO 405) ⟵
404c	During your pregnancy with (NAME) did you visit a health care facility for preventive care because of this illness?	YES . . . . 1 NO . . . . 2 (SKIP TO 405) ⟵	YES . . . . 1 NO . . . . 2 (SKIP TO 405) ⟵

404D	What type of health care facility did you visit for preventive care?	POLYCLINIC 1
		 WOMEN'S CONSULTING CTR 2
		 HOSPITAL 3
		 AMBULATORY 4
		 MEDSANCHAST 5
		 OTHER 6
		        (SPECIFY)
		 DON'T KNOW 8
			POLYCLINIC 1
			 WOMEN'S CONSULTING CTR 2
			 HOSPITAL 3
			 AMBULATORY 4
			 MEDSANCHAST 5
			 OTHER 6
			        (SPECIFY)
			 DON'T KNOW 8

405	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 SMALL . . . . 4 VERY SMALL . . . . 5 DON'T KNOW 8	VERY LARGE . . . . 1 LARGER THAN AVERAGE . . . . 2 AVERAGE . . . . 3 SMALL . . . . 4 VERY SMALL . . . . 5 DON'T KNOW 8
406	Was (NAME) weighed at birth?	YES . . . . 1 NO . . . . 2 (SKIP TO 408)	YES . . . . 1 NO . . . . 2 (SKIP TO 408)
407	How much did (he/she) 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
408	Was the length of (NAME) measured at birth?	YES . . . . 1 NO . . . . 2 (SKIP TO 410)	YES . . . . 1 NO . . . . 2 (SKIP TO 410)
409	What was length of (NAME) at birth? RECORD LENGTH FROM HEALTH CARD, IF AVAILABLE	CENTIMETERS FROM CARD . . . . 1 ☐☐ CENTIMETERS FROM RECALL . . . . 2 ☐☐ DON'T KNOW 998	CENTIMETERS FROM CARD . . . . 1 ☐☐ CENTIMETERS FROM RECALL . . . . 2 ☐☐ DON'T KNOW 998

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____

410	Has your period returned since the birth of (NAME)?	YES 1
		   (SKIP TO 412) ←——┘
		NO 2
		   (SKIP TO 413) ←——┘	

411	Did your period return between the birth of (NAME) and your next pregnancy?		YES . . . . .1 NO . . . . .2 (SKIP TO 415) ←——┘
412	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

413	CHECK 227:
	
	IS RESPONDENT CURRENTLY PREGNANT?
		NOT PREG- ☐ PREGNANT OR ☐
		NANT UNSURE
		              ↓
		        (SKIP TO 415)	

414	Have you resumed sexual realtions since the birth of (NAME)?	YES. . . . . .1 NO . . . . .2 (SKIP TO 416) ←——┘	
415	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
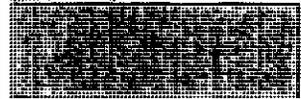
416	Did you ever breastfeed (NAME)?	YES. 1
		
		NO 2
		   (SKIP TO 422) ←——┘
			YES. 1
			
			NO 2
			   (SKIP TO 422) ←——┘

417	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 ☐☐

418	CHECK 222: CHILD ALIVE?	ALIVE ☐ NOT ALIVE ☐ (SKIP TO 420)	ALIVE ☐ NOT ALIVE ☐ (SKIP TO 420)
419	Are you still breastfeeding (NAME)?	YES . . . . 1 (SKIP TO 423) ←⅃ NO 2	YES . . . . 1 (SKIP TO 423) ←⅃ NO 2
420	For how many months did you breastfeed (NAME)?	MONTHS . . . . ☐☐ DON'T KNOW 98	MONTHS . . . . ☐☐ DON'T KNOW 98
421	Why did you stop breastfeeding (NAME)?	MOTHER ILL/WEAK . . . . 01 CHILD ILL/WEAK . . . . 02 CHILD DIED . . . . 03 NIPPLE 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 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 _____
422	CHECK 418 CHILD ALIVE?	ALIVE ☐ NOT ALIVE ☐ (SKIP TO 425) (GO BACK TO 405 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 433)	ALIVE ☐ NOT ALIVE ☐ (SKIP TO 425) (GO BACK TO 405 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 433)
423	How many times did you breastfeed last night between sunset and sunrise? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER.	NUMBER OF NIGHTTIME FEEDINGS . . . . ☐☐	NUMBER OF NIGHTTIME FEEDINGS . . . . ☐☐
424	How many times did you breastfeed yesterday during the daylight hours? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER.	NUMBER OF DAYTIME FEEDINGS . . . . ☐☐	NUMBER OF DAYTIME FEEDINGS . . . . ☐☐
425	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

426	At any time yesterday or last night, was (NAME) given any of the following?	YES NO DK	YES NO DK
	Water (boiled and not boiled)?	WATER 1 2 8	WATER 1 2 8
	Sugar water?	SWEET WATER 1 2 8	SWEET WATER 1 2 8
	Juice?	JUICE 1 2 8	JUICE 1 2 8
	Tea?	TEA 1 2 8	TEA 1 2 8
	Baby formula?	BABY FORMULA 1 2 8	BABY FORMULA 1 2 8
	Milk products (fresh, powdered, tinned milk)?	MILK 1 2 8	MILK 1 2 8
	Fermented milk (kefir, airan, kumys, yogurt)?	FERMENTED MILK 1 2 8	FERMENTED MILK 1 2 8
	Any other liquids (soups, coca-cola, etc.)?	OTHER LIQUIDS 1 2 8	OTHER LIQUIDS 1 2 8
	Fruits and vegetables?	FRUITS AND VEGETABLES . . 1 2 8	FRUITS AND VEGETABLES . 1 2 8
	Any food made from wheat, rice, maize, such as bread, noodles, pasta, etc.?	PASTA AND FOOD MADE FROM GRAIN . . 1 2 8	PASTA AND FOOD MADE FROM GRAIN . 1 2 8
	Any food made from potatoes, carrots, or tuber?	POTATOE AND TUBER 1 2 8	POTATOE AND TUBER 1 2 8
	Eggs, fish, poultry?	EGG/FISH/POULTRY 1 2 8	EGG/FISH/POULTRY 1 2 8
	Meat (lamb, beef, ham, horse meat, etc.)?	MEAT 1 2 8	MEAT 1 2 8
	Sweets, chocolate, cookies, etc.?	SWEETS 1 2 8	SWEETS 1 2 8
	Any other solid or semi-solid foods?	OTHER SOLID OR SEMI-SOLID FOODS 1 2 8	OTHER SOLID OR SEMI-SOLID FOODS 1 2 8
427	CHECK 426: FOOD OR LIQUID GIVEN YESTERDAY?	"YES" TO ONE OR MORE ☐ "NO/DK" TO ALL ☐ (SKIP TO 431))	"YES" TO ONE OR MORE ☐ "NO/DK" TO ALL ☐ (SKIP TO 431))
430	(Aside from breastfeeding,) how many times did (NAME) eat yesterday, 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
432		GO BACK TO 405 IN NEXT COLUMN; OR IF NO MORE BIRTHS, GO TO 433.	GO BACK TO 405 IN NEXT COLUMN; OR IF NO MORE BIRTHS, GO TO 433.

Section 4B. IMMUNIZATION AND HEALTH

433	CHECK 403, 404 AND 418: ENTER LINE NUMBER FOR EACH LIVE BIRTH SINCE JANUARY 1994 IN THE TABLE. INDICATE WHETHER THE CHILD IS ALIVE OR NOT ALIVE.
	ASK THE QUESTIONS ABOUT EACH OF THESE BIRTHS BEGINNING WITH THE LAST BIRTH.
	(IF THERE ARE MORE THAN 2 BIRTHS, USE ADDITIONAL QUESTIONNAIRE).

434	LINE NUMBER FROM 403	LAST BIRTH	NEXT-TO-LAST BIRTH
		LINE NUMBER	LINE NUMBER . . . . . .

435	NAME FROM 404	NAME	NAME
	SURVIVORSHIP STATUS FROM 418	ALIVE ☐ NOT ALIVE ☐	ALIVE ☐ NOT ALIVE ☐
		(GO TO Q 435 IN NEXT COLUMN, IF NO MORE BIRTHS, GO TO 458).	(GO TO Q 435 IN NEXT COLUMN, IF NO MORE BIRTHS, GO TO 458).

436	Do you have a card where (NAME'S) vaccinations are written?		
		YES, SEEN 1	YES, SEEN 1
		(SKIP TO 438)	(SKIP TO 438)
	IF YES: May I see It please?	YES, NOT SEEN . . . . ·2	YES, NOT SEEN 2
		(SKIP TO 440)	(SKIP TO 440)
		NO CARD 3	NO CARD 3

437	Did you ever have a vaccination card for (NAME)?		
		YES 1	YES 1
		(SKIP TO 440)	(SKIP TO 440)
		NO 2	NO 2

438	(1) COPY VACCINATION DATES 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.

		DAY	MONTH	YEAR	DAY	MONTH	YEAR
BCG (IMMUNIZATION AGAINST TUBERCULOSIS)	BCG						
MANTU PROBE (1 : 2000 DILUTION)	MANTU . . .						
IMMUNIZATION AGAINST POLIOMYELITIS:	OPV 0						
POLIO 0 (AT THE HOSPITAL)							
POLIO 1	OPV1						
POLIO 2	OPV2						
POLIO 3	OPV3						
POLIO 4	OPV4						
POLIO 5	OPV5						
IMMUNIZATION AGAINST DIPHTHERIA, PERTUSSIS, TETANUS (DPT); OR AGAINST DIPHTHERIA AND TETANUS (DT)	DT						
DPT/DT 1	D2						
DPT/DT 2	D3						
DPT/DT 3	D4						
DPT-DT 4							
IMMUNIZATION AGAINST MEASLES	MEASLES .						

439	Has (NAME) received any vaccinations that are not recorded on this card? RECORD 'YES' ONLY IF RESPONDENT MENTIONS BCG, POLIO 1 - 5, DPT/DT 1 - 4, AND/OR MEASLES VACCINE(S).	YES . . . . 1 (PROBE FOR VACCINATIONS, GO BACK TO 438 AND WRITE '66' IN THE CORRESPONDING DAY COLUMN) NO . . . . 2 DON'T KNOW . . . . 8 (SKIP TO 442)	YES . . . . 1 (PROBE FOR VACCINATIONS, GO BACK TO 438 AND WRITE '66' IN THE CORRESPONDING DAY COLUMN) NO . . . . 2 DON'T KNOW . . . . 8 (SKIP TO 442)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
440	Did (NAME) ever receive any vaccinations to prevent him(her) from getting diseases?	YES .... 1 NO .... 2 ┐ 　(SKIP TO 442) ←┘ DON'T KNOW .... 8 ┘	YES .... 1 NO .... 2 ┐ 　(SKIP TO 442) ←┘ DON'T KNOW .... 8 ┘
441	Please tell me if (NAME) received any of the following vaccinations:		
441A	A BCG vaccination against tuberculosis, that is, an injection in the arm or shoulder that left a scar?	YES .... 1 NO .... 2 DON'T KNOW 8	YES .... 1 NO .... 2 DON'T KNOW 8
441B	Polio vaccine, that is drops in the mouth?	YES .... 1 NO .... 2 ┐ 　(SKIP TO 441E) ←┘ DON'T KNOW .... 8 ┘	YES .... 1 NO .... 2 ┐ 　(SKIP TO 441E) ←┘ DON'T KNOW .... 8 ┘
441C	How many times?	NUMBER OF TIMES .... ☐	NUMBER OF TIMES .... ☐
441D	When was the first polio vaccine given, just after birth or later?	JUST AFTER BIRTH .... 1 LATER .... 2 DON'T KNOW 8	JUST AFTER BIRTH .... 1 LATER .... 2 DON'T KNOW 8
441E	DPT/DP vaccination, that is, an injection usually given at the same time as polio drops?	YES ....1 NO .... 2 ┐ 　(SKIP TO 441 G) ←┘ DON'T KNOW .... 8 ┘	YES ....1 NO .... 2 ┐ 　(SKIP TO 441 G) ←┘ DON'T KNOW .... 8 ┘
441F	How many times?	NUMBER OF TIMES .... ☐	NUMBER OF TIMES .... ☐
441G	An injection to prevent measles?	YES .... 1 NO .... 2 DON'T KNOW 8	YES .... 1 NO .... 2 DON'T KNOW 8
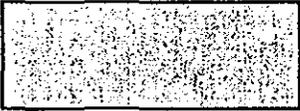
442	Has (NAME) been ill with a fever at any time in the last 2 weeks?	YES............................ 1 NO......................... 2 DON'T KNOW.................... 8	YES............................ 1 NO......................... 2 DON'T KNOW.................... 8
443	Has (NAME) been ill with cough at any time in the last 2 weeks?	YES............................ 1 NO......................... 2⌐ (SKIP TO 447) ←———— DON'T KNOW.................... 8 ⌐	YES............................ 1 NO......................... 2⌐ (SKIP TO 447) ←———— DON'T KNOW.................... 8 ⌐
444	When (NAME) was ill with cough, did he/she breathe faster than usual with short, fast breaths?	YES............................ 1 NO......................... 2 DON'T KNOW.................... 8	YES............................ 1 NO......................... 2 DON'T KNOW.................... 8
445	Did you seek advice or treatment for the cough?	YES............................ 1 NO......................... 2⌐ (SKIP TO 447) ←————	YES............................ 1 NO......................... 2⌐ (SKIP TO 447) ←————

446	Where did you seek advice or treatment?
	
	Anywhere else?
	
	RECORD ALL MENTIONED..
		PUBLIC SECTOR
		  HOSPITAL................... A
		  POLYCLINIC................ B
		  AMBULATORY............... C
		  PHARMACY................. D
		  FAP...................... E
		  OTHER PUBLIC HEALTH FACILITY
		
		  ——————————— F
		  (SPECIFY)
		PRIVATE HEALTH SECTOR
		  PRIVATE CLINIC........... G
		  PRIVATE PHARMACY........ H
		  PRIVATE DOCTOR........... I
		  OTHER PRIVATE HEALTH FACILITY
		
		  ——————————— J
		  (SPECIFY)
		
		OTHER PRIVATE
		  SHOP..................... K
		  PRIVATE PERSON (NON MEDICAL) L
		
		  OTHER_____ X
		  (SPECIFY)
			PUBLIC SECTOR
			  HOSPITAL................... A
			  POLYCLINIC................ B
			  AMBULATORY............... C
			  PHARMACY................. D
			  FAP...................... E
			  OTHER PUBLIC HEALTH FACILITY
			
			  ——————————— F
			  (SPECIFY)
			PRIVATE HEALTH SECTOR
			  PRIVATE CLINIC........... G
			  PRIVATE PHARMACY........ H
			  PRIVATE DOCTOR........... I
			  OTHER PRIVATE HEALTH FACILITY
			
			  ——————————— J
			  (SPECIFY)
			
			OTHER PRIVATE
			  SHOP..................... K
			  PRIVATE PERSON (NON MEDICAL) L
			
			  OTHER_____ X
			  (SPECIFY)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____

447	Has (NAME) had diarrhea in the last two weeks?	YES 1
		NO .... 2 ⌐
		  (SKIP TO 457) ←
		DON'T KNOW .... 8 ⌐
			YES 1
			NO .... 2 ⌐
			  (SKIP TO 457) ←
			DON'T KNOW .... 8 ⌐

448	Was there any blood in the stools?	YES......................... 1 NO .... 2 DON'T KNOW................... 8	YES......................... 1 NO .... 2 DON'T KNOW................... 8
449	On the worst day of the diarrhea, how many bowel movements did (NAME) have?	NUMBER .... ☐☐ DON'T KNOW................. 98	NUMBER .... ☐☐ DON'T KNOW................. 98
450	Was he/she given the same amount to drink as before the diarrhea, or more, or less?	SAME........................ 1 MORE........................ 2 LESS .... 3 DON'T KNOW.................. 8	SAME........................ 1 MORE........................ 2 LESS .... 3 DON'T KNOW.................. 8
451	Was he/she given the same amount food to eat as before the diarrhea, or more, or less?	SAME........................ 1 MORE........................ 2 LESS .... 3 DON'T KNOW.................. 8	SAME........................ 1 MORE........................ 2 LESS .... 3 DON'T KNOW.................. 8
452	Was (NAME) given rehydron, fluid made from a special packet to drink?	YES .... 1 NO .... 2 DON'T KNOW 8	YES .... 1 NO .... 2 DON'T KNOW 8

453	Was anything (else) given to treat the diarrhea?	YES......................... 1
		NO .... 2 ⌐
		  (SKIP TO 455) ←
		DON'T KNOW .... 8 ⌐
			YES......................... 1
			NO .... 2 ⌐
			  (SKIP TO 455) ←
			DON'T KNOW .... 8 ⌐

454	What was given to treat the diarrhea?
	
	Anything else?
	
	RECORD ALL MENTIONED
		RECOMMENDED HOME FLUIDS ...... A
		PILLS OR SYRUP .... B
		INJECTION C
		(I.V.) INTRAVENOUS. .... D
		HOME REMEDIES/HERBS .... E
		OTHER _____ X
		    (SPECIFY)
			RECOMMENDED HOME FLUIDS ...... A
			PILLS OR SYRUP .... B
			INJECTION C
			(I.V.) INTRAVENOUS. .... D
			HOME REMEDIES/HERBS .... E
			OTHER _____ X
			    (SPECIFY)

455	Did you seek advice or treatment for the diarrhea?	YES. 1
		 NO . . . . 2 ⌐
		   (SKIP TO 457) ←
		 DON'T KNOW . . . . 8 ⌐
			YES. 1
			 NO . . . . 2 ⌐
			   (SKIP TO 457) ←
			 DON'T KNOW . . . . 8 ⌐

456	Where did you seek advice or treatment?
	
	 Anywhere else?
	
	 RECORD ALL MENTIONED.
		PUBLIC SECTOR
		  HOSPITAL. . . . . A
		  POLYCLINIC . . . . B
		  AMBULATORY C
		  PHARMACY. . . . . D
		  FAP . . . . E
		  OTHER PUBLIC HEALTH FACILITY
		  ———————————— F
		    (SPECIFY)
		 PRIVATE HEALTH SECTOR
		  PRIVATE CLINIC . . . . G
		  PRIVATE PHARMACY . . . . H
		  PRIVATE DOCTOR I
		  OTHER PRIVATE HEALTH FACILITY
		  ———————————— J
		    (SPECIFY)
		
		 OTHER PRIVATE
		  SHOP . . . . K
		  PRIVATE PERSON (NON MEDICAL) L
		
		 OTHER ——————————— X
		    (SPECIFY)
			PUBLIC SECTOR
			  HOSPITAL. . . . . A
			  POLYCLINIC . . . . B
			  AMBULATORY C
			  PHARMACY . . . . D
			  FAP . . . . E
			  OTHER PUBLIC HEALTH FACILITY
			  ———————————— F
			    (SPECIFY)
			 PRIVATE HEALTH SECTOR
			  PRIVATE CLINIC . . . . G
			  PRIVATE PHARMACY . . . . H
			  PRIVATE DOCTOR I
			  OTHER PRIVATE HEALTH FACILITY
			  ———————————— J
			    (SPECIFY)
			
			 OTHER PRIVATE
			  SHOP . . . . K
			  PRIVATE PERSON (NON MEDICAL) L
			
			 OTHER ——————————— X
			    (SPECIFY)

457		GO BACK TO 435 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 458	GO BACK TO 435 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 458

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
458	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	
459	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	
460	When a child is sick with diarrhea, what signs of illness would tell you that he or she should be taken to a health facility or health worker? RECORD ALL MENTIONED.	REPEATED WATERY STOOL . . . . A ANY WATERY STOOL . . . . B REPEATED VOMITING. . . . . C ANY VOMITING . . . . D BLOOD IN STOOL . . . . E HIGH BODY TEMPERATURE. . . . . 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	
461	When a child is sick with a cough, what signs of illness would tell you that he or she should be taken to a health facility or health worker? RECORD ALL MENTIONED	FAST BREATHING. . . . . A DIFFICULT BREATHING . . . . B NOISY BREATHING . . . . C HIGH BODY TEMPERATURE . . . . 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	
462	CHECK 452, ALL COLUMNS NO CHILD RECEIVED REHYDRON [ ] ANY CHILD RECEIVED REHYDRON [ ]		501
463	Have you ever heard of a special product called rehydron you can get for the treatment of diarrhea?	YES. . . . . 1 NO 2	

Section 5. CONTRACEPTION

Now I would like to talk about contraception - the various ways or methods that a couple can use to delay or avoid a pregnancy.

CIRCLE CODE 1 IN 501 FOR EACH METHOD MENTIONED SPONTANEOUSLY.

THEN PROCEED DOWN COLUMN 502, READING THE NAME AND DESRCIPTION OF EACH METHOD NOT MENTIONED SPONTANEOUSLY. CIRCLE CODE 2 IF METHOD IS RECOGNIZED, AND CODE 3 IF NOT RECOGNIZEO.

THEN, FOR EACH METHOD WITH CODE 1 OR 2 CIRCLED IN 501 OR 502.ASK 503.

501 Which ways or methods have you heard about?		502 Have you ever heard of (METHOD)?		503 Have you ever used (METHOD)?	
	SPONTANEOUS YES	PROBED YES	NO		
01 PILL Women can take a pill every day.	1	2	3 →	YES .... 1 NO..................... 2	
02 IUD Women can have a loop or coil placed inside them by a doctor.	1	2	3 →	YES .... 1 NO..................... 2	
03 INJECTIONS Women can have an injection by a doctor or nurse which stops them from becoming pregnant for several months.	1	2	3 →	YES .... 1 NO..................... 2	
05 DIAPHRAGM, FOAM, JELLY. Women can place a sponge, suppository, diaphragm, jelly inside themslves before intercourse.	1	2	3 →	YES .... 1 NO..................... 2	

06	CONDOM. Men can use a rubber sheath during sexual intercourse.	1	2		YES .... 1 NO.......................... 2
				3⟶	
07	FEMALE STERILIZATION. Women can have an operation to avoid having any more children.				Have you ever had an operation to avoid having any more children?
		1	2		YES 1
				3⟶	NO.......................... 2
09	CALENDAR METHOD. Every month that a women is sexually active she can avoid having sexual intercourse on the days of the month she is most likely to get pregnant.	1	2		YES .... 1 NO.......................... 2
				3⟶	
10	WITHDRAWAL. Men can be careful pull out before climax.	1	2		YES .... 1 NO.......................... 2
				3⟶	
11	Have you heard of any other ways or methods that women or men can use to avoid pregnancy?	1		3	YES .... 1 NO.......................... 2
		_____ (SPECIFY)			
					YES .... 1 NO.......................... 2
		_____ (SPECIFY)			

504 CHECK 503

NOT A SINGLE "YES" (NEVER USED) ☐ AT LEAST ONE "YES" (EVER USED) ☐ ⟶ SKIP TO 509

222
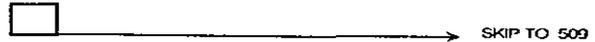
No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
505	Have you ever used anything or tried in any way to delay or avoid getting pregnant?	YES. . . . . 1 NO. 2	→531
507	What have you used or done? *CORRECT 503 AND 504 (AND 502 IF NECESSARY)*		
509	Now I would like to ask you about the first time that you 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. . . . . [ ][ ]	
510	When you first began to use contraception, did you want to have another child but a later time, or did you not want to have another child at all?	WANTED CHILD LATER . . . . 1 DID NOT WANT ANOTHER CHILD. . . . . 2 OTHER _____ 6 (SPECIFY)	
511	CHECK 503 WOMAN NOT STERILIZED [ ] WOMAN STERILIZED [ ]		→514A
512	CHECK 227 NOT PREGNANT OR UNSURE [ ] PREGNANT [ ]		→532
513	Are you currently doing something or using any method to delay or avoid getting pregnant?	YES . . . . 1 NO. 2	→531

223

514	Which method are you using?	PILLS .... 01 IUD .... 02 INJECTIONS .... 03 DIAPHRAGM/FOAM/JELLY .... 05 CONDOM .... 06 → 526 FEMALE STERILIZATION .... 07 → 518 CALENDAR METHOD .... 09 → 523
514A	CIRCLE '07 FOR FEMALE STERILIZATION.	WITHDRAWAL .... 10 → 526 OTHER _____ 06 (SPECIFY)
515	May I see the package of pills you are now using? RECORD NAME OF BRAND IF PACKAGE IS SEEN	PACKAGE SEEN .... 1 → 517 BRAND NAME _____ PACKAGE NOT SEEN. 2
516	Do you know the brand name of the pills you are now using? RECORD NAME OF BRAND.	BRAND NAME _____ DON'T KNOW 98
517	How much does one packet of pills cost you?	COST .... FREE. .... 9996 → 526 DON'T KNOW. 9998

518	Where did the sterilization take place?
	
	IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF OF THE PLACE.
	PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.
	
	_____
	(NAME OF PLACE)
		PUBLIC SECTOR
		  HOSPITAL 1
		  POLYCLINIC 2
		  WOMEN'S CENTER 3
		  MOBILE CLINIC 4
		OTHER HEALTH FACILITY
		_____ 6
		(SPECIFY)
		DON'T KNOW 8

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
521	In what month and year was the sterilization performed?	MONTH. . . . . ▢▢ YEAR . . . . ▢▢▢▢	→ 527

523	How do you determine which days of your monthly cycle not to have sexual relations	BASED ON CALENDAR 01
		BASED ON BODY TEMPERATURE. 02
		BASED ON CERVICAL MUCUS
		    (BILLING METHOD) 03
		BASED ON RECTAL TEMPERATURE. 04
		NO SPECIFIC SYSTEM 05
		
		OTHER _____ 96
		          (SPECIFY)	

526	For how many months have you been using (METHOD) continuously? IF LESS THAN 1 MONTH, RECORD '00'	MONTHS. . . . . ▢▢ 8 YEARS OR LONGER 96	
527	CHECK 514 CIRCLE METHOD CODE:	PILLS . . . . 01 IUD . . . . 02 INJECTIONS . . . . 03 DIAPHRAGM/FOAM/JELLY . . . . 05 CONDOM . . . . 06 FEMALE STERILIZATION . . . . 07 → 529A CALENDAR METHOD . . . . 09 WITHDRAWAL . . . . 10 → 532 OTHER _____ 96 (SPECIFY)	

225

527A	Who recommended that you use this method of contraception?	DOCTOR FROM THE HOSPITAL.............. 01 DOCTOR FROM WOMEN'S CENTER.......... 02 OTHER HEALTH PROFESSIONAL............. 03 PHARMACIST............................. 04 FRIENDS/RELATIVES...................... 05 DECIDED HERSELF........ .... 06 OTHER _____ 96 SPECIFY	

528	Where did you obtain (METHOD) the last time?
	
	 IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF OF THE PLACE.
	 PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.
	
	 _____
	 (NAME OF PLACE)
		PUBLIC SECTOR
		   HOSPITAL............................. 11
		   POLYCLINIC.......................... 12
		   FAMILY PLANNING CLINIC 13
		   PHARMACY...................... 14
		   COMMUNITY HEALTH WORKER........... 15
		   OTHER PUBLIC HEALTH FACILITY
		
		   _____ 16
		   (SPECIFY)
		
		 PRIVATE MEDICAL SECTOR
		   PRIVATE HOSPITAL/CLINIC 21
		   PRIVATE PHARMACY.................... 22
		   PRIVATE DOCTOR..................... 23
		   MOBILE CLINIC...................... 24
		   PRIVATE HEALTH WORKER.............. 25
		   OTHER PRIVATE HEALTH FACILITY
		
		   _____ 26
		   (SPECIFY)
		
		 OTHER SOURCE
		   SHOP. 31
		   RELIGIOUS ORGANIZATION 32
		   FRIENDS/RELATIVES.................. 33
		   OTHER _____ 36
		   (SPECIFY)	

529	Do you know another place where you could have obtained (METHOD) the last time?	YES ....1. NO.................................. 2	→ 534
529A	At the time of the sterilization operation, did you know another place where you could have received the operation?		

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP

530	People select the place where they obtain contraceptives for various reasons. What was the main reason you went to (NAME OF PLACE IN Q.528 OR Q.518) instead of the other place you know about?
	
	RECORD RESPONSE AND CIRCLE CODE
	
	_____
		ACCESS-RELATED REASONS
		  CLOSER TO HOME 11
		  CLOSER TO WORK 12
		  AVAILABILITY OF TRANSPORT 13
		
		SERVICE-RELATED REASONS
		  STAFF MORE COMPETENT/FRIENDLY 21
		  CLEANER FACILITY 22
		  OFFERS MORE PRIVACY 23
		  SHORTER WAITING TIME 24
		  LONGER HOURS OF OPERATION 25
		  USE OTHER SERVICES AT THE FACILITY 26
		
		LOWER COST/CHEAPER 31
		
		WANTED ANONYMITY 41
		
		OTHER _____ 96
		    (SPECIFY)
		
		DON'T KNOW 98
			→ 534

531	What is the main reason you are not using a method of contraception to avoid pregnancy?	NOT MARRIED 11
		
		FERTILITY-RELATED REASONS
		  NOT HAVING SEX 21
		  INFREQUENT SEX 22
		  MENOPAUSAL/HYSTERECTOMY 23
		  SUBFECUND/INFECUND 24
		  POSTPARTUM/BREASTFEEDING 25
		  WANTS (MORE)CHILDREN 26
		  PREGNANT 27
		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	

227

| 532 | Do you know of a place where you can obtain a method of contraception? | YES . . . . 1 | |
| | | NO . . . . 2 → 534 |

| 533 | Where is that?

IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF OF THE PLACE.
PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE.

_____
(NAME OF PLACE) | **PUBLIC SECTOR**
  HOSPITAL 11
  POLYCLINIC 12
  FAMILY PLANNING CLINIC 13
  PHARMACY 14
  COMMUNITY HEALTH WORKER 15
  OTHER PUBLIC HEALTH FACILITY
  _____ 16
             (SPECIFY)

PRIVATE MEDICAL SECTOR
  PRIVATE HOSPITAL/CLINIC 21
  PRIVATE PHARMACY 22
  PRIVATE DOCTOR 23
  MOBILE CLINIC 24
  PRIVATE HEALTH WORKER 25
  OTHER PRIVATE HEALTH FACILITY
  _____ 26
             (SPECIFY)

OTHER SOURCE
  SHOP 31
  RELIGIOUS ORGANIZATION 32
  FRIENDS/RELATIVES 33
  OTHER_____ 36
             (SPECIFY) |

| 534 | Were you visited by a health worker who discussed the use of contraception during the last 12 months? | YES . . . . 1 | |
| | | NO . . . . 2 |

| 535 | Have you visited a health facility for any reason in the last 12 months? | YES . . . . 1 | |
| | | NO . . . . 2 → 537 |

| 536 | Did any staff member at the health facility speak to you about contraception? | YES . . . . 1 | |
| | | NO . . . . 2 |

537	Do you think that breast feeding can affect a woman's chance of becoming pregnant?	YES 1	
		NO 2
		DON'T KNOW . . . . 8 → 543

538	Do you think that a woman's chance of becoming pregnant is increased or decreased by breastfeeding?	INCREASED . . . . 1 → 543	
		DECREASED 2
		DEPENDS 3
		DON'T KNOW 8

228

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
539	CHECK 208 ONE OR MORE BIRTHS ☐　　　　　　　NO BIRTHS ☐		→543
540	Have you ever relied on breastfeeding as a method of avoiding pregnancy?	YES . . . . 1 NO 2	→543
541	CHECK 227 AND 514 NOT PREGNANT OR UNSURE AND　　☐ NOT STERILIZED　　　　　　EITHER PREGNANT OR　　☐ STERILIZED		→543
542	Are you currently relying on breastfeeding to avoid getting pregnant?	YES. . . . . 1 NO 2	
543	(SHOW LOGO 1) Have you ever seen this symbol?	YES . . . . 1 NO 2	→546
544	Where have you seen it? Anywhere else?	PHARMACY. . . . . 1 WOMEN'S CENTER . . . . 2 POLYCLINIC . . . . 3 TELEVISION . . . . 4 OTHER _____ 6 　　　　　(SPECIFY)	
545	What does this symbol mean?	CONTRACEPTIVES . . . . 1 DRUG. . . . . 2 OTHER _____ 6 　　　　　(SPECIFY) DON'T KNOW 8	

229

546	Now I would like to read you some statements about oral contraeptives (pills) and injectable contraceptives. For each statement, please tell me whether you strongly agree, agree somewhat, disagree somewhat or strongly disagree.					
	STATEMENT	STRONGLY AGREE	AGREE SOMEWHAT	DISAGREE SOMEWHAT	STRONGLY DISAGREE	DON'T KNOW
	a. Taking oral contraceptives (pills) usually does not harm a woman's health	1	2	3	4	8
	b. If a woman experiences nausea when she starts taking oral contraceptives, she should not stop taking them immediately.	1	2	3	4	8
	c. Women who use injectable contraceptives cannot get pregnant again after they stop the injection	1	2	3	4	8
	d. Women who use injectable contraceptives often stop menstruating while they are taking them.	1	2	3	4	8

547	If a couple asked your advice on how to avoid having any more children in the future, which of the following would you recommend:
	use condoms;
	get the pills;
	use an IUD;
	take a chance and use abortion if pregnancy occurs
	other method

USE CONDOMS . . . . A

GET THE PILLS . . . . B

USE AN IUD C

USE ABORTION . . . . D

OTHER _____ X
(SPECIFY)

548	Do you feel that doctors around here are more in favor of women using some contraceptive method, or more in favor of abortion?

IN FAVOR OF ABORTION. 1

IN FAVOR OF USING METHOD 2

DON'T KNOW 8

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
549	Women see advantages and disadvantages of differet methods of birth control. Please tell me whether you think that each of these methods of birth control is a problem or is not a problem.		
550	CHECK 501 AND 502 KNOWS IUD ☐　　　　　　　　　　　DOESN'T KNOW IUD ☐		→568
551	Let's begin with the IUD. How easy is to get an IUD? Is it a problem to get it?	PROBLEM . . . . 1 NO PROBLEM. . . . . 2 DON'T KNOW 8	
552	Do you think that the IUD is a reliable method of contraception?	RELIABLE. . . . . 1 NOT RELIABLE. . . . . 2 DON'T KNOW 8	
553	Do you think that there are any health problems or side effects with the IUD that would make you reluctant to use it?	PROBLEM . . . . 1 NO PROBLEM. . . . . 2 DON'T KNOW 8	
554	Is there any monetary cost to having an IUD inserted that would be a problem?	PROBLEM . . . . 1 NO PROBLEM. . . . . 2 DON'T KNOW 8	
555	Does your husband (partner) feel that there are any of these or other problems with the IUD?	PROBLEM . . . . 1 NO PROBLEM. . . . . 2 NOT APPLICABLE . . . . 3 DON'T KNOW 8	
556	CHECK 503 EVER USED IUD ☐　　　　　　　　　　　NEVER USED IUD ☐		→568
557	What month and year was the IUD first inserted?	MONTH. . . . . ☐☐ DON'T KNOW. . . . . 98 YEAR . . . . ☐☐☐☐ DON'T KNOW. 9998	

231

| 558 | Was that IUD ever removed? | YES . . . . 1 |
| | | NO . . . . 2 ──────→568 |

559	In what month and year was the IUD removed?	MONTH. . . . . ☐☐
		DON'T KNOW. 98
		YEAR . . . . ☐☐☐☐
		DON'T KNOW. 9998

| 560 | Did you have another IUD inserted? | YES . . . . 1 |
| | | NO. . . . . 2 ──────→568 |

561	What month and year was that IUD inserted?	MONTH. . . . . ☐☐
		DON'T KNOW. 98
		YEAR . . . . ☐☐☐☐
		DON'T KNOW. 9998

| 562 | Was that IUD ever removed? | YES . . . . 1 |
| | | NO. . . . . 2 ──────→566 |

563	In what month and year was the IUD removed?	MONTH. . . . . ☐☐
		DON'T KNOW. 98
		YEAR . . . . ☐☐☐☐
		DON'T KNOW. 9998

| 564 | Did you have another IUD inserted? | YES . . . . 1 |
| | | NO. . . . . 2 ──────→568 |

232

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
565	What month and year was that IUD inserted?	MONTH. . . . . [ ][ ] DON'T KNOW. . . . . 98 YEAR . . . . [ ][ ][ ][ ] DON'T KNOW. 9998	
566	Was that IUD ever removed?	YES . . . . 1 NO. 2	→568
567	In what month and year that IUD was removed?	MONTH. . . . . [ ][ ] DON'T KNOW. . . . . 98 YEAR . . . . [ ][ ][ ][ ] DON'T KNOW. 9998	
568	CHECK 501 AND 502 KNOWS PILLS [ ] DOESN'T KNOW PILLS [ ]		→576
569	Could you tell me the brand name of contraceptive pills? RECORD NAME OF BRAND	_____ [ ][ ] DON'T KNOW 98	

570	To be protected from getting pregnant does a woman need to take pills
	    Every day
	    Once in a week
	    Once in a month?
		EVERY DAY. 1
		ONCE IN A WEEK 2
		ONCE IN A MONTH 3
		OTHER_____6
		            (SPECIFY)
		DON'T KNOW 8	

571	How easy is it to get pills? Is it a problem to get them?	PROBLEM . . . . 1 NO PROBLEM. . . . . 2 DON'T KNOW 8	
572	Do you think that pills are a reliable method of contraception?	RELIABLE. . . . . 1 NOT RELIABLE. . . . . 2 DON'T KNOW 8	
573	Do you think that there are any health problems or side effects with pills that would make you relucatant to use them?	PROBLEM . . . . 1 NO PROBLEM. . . . . 2 DON'T KNOW 8	

233

574	Is there any monetary cost to purchase pills that would be a problem?	PROBLEM 1
		NO PROBLEM 2
		DON'T KNOW 8
575	Does your husband (partner) feel that there are any of these or other problems with pills?	PROBLEM 1
		NO PROBLEM 2
		NOT APPLICABLE 3
		DON'T KNOW 8

576 CHECK 501 AND 502

KNOWS CONDOMS ☐   DOESN'T KNOW CONDOMS ☐ ──────→ 581
↓

577	How easy is it to get condoms, easy or difficult?	EASY 1
		DIFFICULT 2
		DON'T KNOW 8
578	Do you think that condoms are a reliable method of contraception?	RELIABLE 1
		NOT RELIABLE 2
		DON'T KNOW 8
579	Is there any monetary cost to purchase condoms that would be a problem?	PROBLEM 1
		NO PROBLEM 2
		DON'T KNOW 8
580	Does your husband (partner) feel that there are any of these or other problems with the use of condoms?	PROBLEM 1
		NO PROBLEM 2
		NOT APPLICABLE 3
		DON'T KNOW 8

581 CHECK 501 AND 502

KNOWS INJECTABLES ☐   DOESN'T KNOW INJECTABLES ☐ ──────→ 589
↓

| 582 | Could you tell me the name of injectable contraceptives? RECORD NAME OF BRAND | _____ ☐☐ |
| | | DON'T KNOW . . . . 98 |

234

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
583	Do you know for how long injections can protect a woman from becoming pregnant?	DAYS........................1 ☐☐ WEEKS......................2 ☐☐ MONTHS....................3. ☐☐ OTHER_____ 996 SPECIFY DON'T KNOW........................ 998	
584	How easy is it to get injectable contraceptives, easy or difficult?	EASY................................. 1 DIFFICULT............................ 2 DON'T KNOW......................... 8	
585	Do you think that injectable contraceptives are a reliable method of contraception?	RELIABLE............................. 1 NOT RELIABLE........................ 2 DON'T KNOW......................... 8	
586	Do you think that there are any health problems or side effects with the injectable contraceptives that would make you relucatant to use them?	PROBLEM............................ 1 NO PROBLEM........................ 2 DON'T KNOW........................ 8	
587	Is there any monetary cost to purchase the injectable contraceptives that would be a problem?	PROBLEM............................ 1 NO PROBLEM........................ 2 DON'T KNOW........................ 8	
588	Does your husband (partner) feel that there are any of these or other problems with injectable contraceptives?	PROBLEM............................ 1 NO PROBLEM........................ 2 NOT APPLICABLE..................... 3 DON'T KNOW........................ 8	

589	Now let's talk about induced abortion during the first few weeks or months of pregnancy which as you know is one of the methods of controlling fertility.		
590	If a woman decided to have an abortion, how easy would it be for her to get one? Would it be easy or difficult?	DIFFICULT . . . . 1 EASY . . . . 2 DON'T KNOW 8	→ 593
591	What would be the main difficulty?	_____ _____ _____	
593	Do you think that there are health problems or side effects with induced abortion?	YES . . . . 1 NO . . . . 2 ON'T KNOW 3	
594	Is there any monetary cost to having an abortion that would be a problem?	PROBLEMS . . . . 1 NO PROBLEM. . . . . 2 DON'T KNOW 8	
595	Does your husband (partner) feel that there are any of these or other problems with the use of induced abortion?	PROBLEM . . . . 1 NO PROBLEM. . . . . 2 NOT APPLICABLE . . . . 3 DON'T KNOW 8	
596	Do you approve or disapprove of a woman having an abortion?	APPROVE . . . . 1 DISAPPROVE. . . . . 2 DEPENDS ON SITUATION . . . . 3 DON'T KNOW 8	

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
597	During the last 12 months, have you ever tried to get a contraceptive method ?	YES .... 1 NO .... 2 ON'T KNOW 3	→ 601
597A	Did it happen that you were not able to get it ?	YES .... 1 NO .... 2 ON'T KNOW 3	→ 601
598	What method did you try to get?	PILLS .... 01 IUD .... 02 INJECTIONS .... 03 DIAPHRAGM/FOAM/JELLY .... 05 CONDOM .... 06 FEMALE STERILIZATION .... 07 CALENDAR METHOD .... 09 WITHDRAWAL .... 10 OTHER ——————————— 96 　　　　　(SPECIFY)	
599	Where was the first place you went to try to get the (METHOD)? IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. ———————————————— 　　　　(NAME OF PLACE)	PUBLIC SECTOR 　HOSPITAL .... 11 　POLYCLINIC .... 12 　FAMILY PLANNING CLINIC .... 13 　PHARMACY .... 14 　COMMUNITY HEALTH WORKER .... 15 　OTHER PUBLIC HEALTH FACILITY 　——————————————— 16 　　　　(SPECIFY) PRIVATE MEDICAL SECTOR 　PRIVATE HOSPITAL/CLINIC .... 21 　PRIVATE PHARMACY .... 22 　PRIVATE DOCTOR .... 23 　MOBILE CLINIC .... 24 　PRIVATE HEALTH WORKER .... 25 　OTHER PRIVATE HEALTH FACILITY 　——————————————— 26 　　　　(SPECIFY) OTHER SOURCE 　SHOP. .... 31 　RELIGIOUS ORGANIZATION .... 32 　FRIENDS/RELATIVES .... 33 　OTHER ——————————————— 36 　　　　(SPECIFY)	

237

599A | Why were you unable to get the method from that place?

THE FACILITY HAD MOVED/RELOCATED/
    NO LONGER THERE . . . . A
NO PROVIDER WAS ON DUTY . . . . B
NO SUPPLIES AT FACILITY C
TOO EXPENSIVE . . . . D
DENIED METHOD BY PROVIDER . . . . E
LACK OF PRIVACY/EMBARASSED TO ASK
    FOR METHOD . . . . F
TOO CROWDED . . . . G
OTHER _____ X
         (SPECIFY)
DON'T KNOW . . . . Y

599B | What did you do when you were unable to get the method you wanted?

GOT A DIFFERENT BRAND
    AT THE SAME FACILITY 1
GOT A DIFFERENT METHOD
    AT THE SAME FACILITY 2
WENT TO ANOTHER FACILITY 3
CAME BACK AT A LATER DATE 4
NOTHING 5
OTHER _____ 6
         (SPECIFY)
DON'T KNOW 8

Section 6. MARRIAGE

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
601	PRESENCE OF OTHERS AT THIS POINT.		
			YES	NO
		CHILDREN UNDER 10 . . . . . . 1 . . . 2	
		HUSBAND/PARTNER . . . . . 1 . . . 2	
		OTHER MALES . . . . 1 . . . 2	
		OTHER FEMALES . . . . 1 . . . 2	
602	Are you currently married or living with a man?	CURRENTLY MARRIED 1	
		LIVING WITH A MAN 2	➤ 607
		NOT IN UNION 3	
603	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	
604	Have you ever been married or lived with a man?	FORMERLY MARRIED 1	
		LIVED WITH A MAN 2	➤ 611
		NO 3	➤ 615
606	What is your marital status now: are you widowed, divorced, or separated?	WIDOWED 1	
		DIVORCED 2	➤ 611
		SEPARATED 3	
607	Is your husband/partner living with you now or is he staying elsewhere?	LIVES WITH HER 1	
		STAYING ELSEWHERE 2	
611	Have you been married or lived with a man only once, or more than once?	ONCE 1	
		MORE THAN ONCE 2	

239

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
612	CHECK 611 MARRIED/LIVED WITH A MAN ONLY ONCE ☐　　　　MARRIED/LIVED WITH A MAN MORE THAN ONCE ☐ In what month and year did you start living with your husband/partner?　　　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 9098	→615
613	How old were you when you started living with him?	AGE . . . . ☐☐	
615	Now I need to ask you some questions about sexual activity in order to gain a better understanding of some issues of contraception. When was the last time you had sexual intercourse (if ever)?	NEVER . . . . 000 ————→ 711 DAYS AGO . . . .　1　☐☐ WEEKS AGO . . . .　2 MONTHS AGO . . . .　3 YEARS AGO . . . .　4 BEFORE LAST BIRTH 996	
619	How old were you when you first had sexual intercourse?	AGE . . . . ☐☐ FIRST TIME WHEN MARRIED . . . . . . : 96	

240

Section 7. FERTILITY PREFERENCES

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
701	CHECK 514 WOMAN NOT STERILIZED ☐ WOMAN STERILIZED ☐		→712
702	CHECK 227 NOT PREGNANT OR UNSURE ☐ PREGNANT ☐ 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? Now I have some questions about the future. After the child you are expecting, would like to have another child or would you prefer not to have more children?	HAVE (A/ANOTHER) CHILD . . . . 1 NO MORE/NONE . . . . 2 →704 SAYS SHE CAN'T GET PREGNANT . . . . 3 →706 UNDECIDED/DON'T KNOW. . . . . 8 →704	
703	CHECK 227 NOT PREGNANT OR UNSURE ☐ PREGNANT ☐ How long would you like to wait from now before the birth of (a/another) child? How long would you like to wait after the birth of the child you are expecting before the birth of another child?	MONTHS . . . . 1 ☐☐ YEARS . . . . 2 ☐☐ SOON/NOW . . . . 993 SAYS SHE CAN'T GET PREGNANT . . . . 994 →706 AFTER MARRIAGE . . . . 995 OTHER _____ 996 (SPECIFY) DON'T KNOW 998	

241

704	CHECK 227:		
	NOT PREGNANT OR UNSURE ☐	PREGNANT ☐ ──────────────────→ 707	

705	If you became pregnant in the next few weeks, would you be _happy, unhappy,_ or would it _not matter_ very much?	HAPPY 1
		UNHAPPY 2
		WOULD NOT MATTER 3

706	CHECK 513: USING A METHOD?		
	NOT ASKED ☐	NOT CURRENTLY USING ☐	CURRENTLY USING ☐ ──────────────→ 711A

707	Do you think you will use a method to delay or avoid pregnancy within the next 12 months?	YES . . . . 1 ─────→ 709
		NO 2
		DON'T KNOW 8

708	Do you think you will use a method at any time in the future?	YES 1
		NO . . . . 2 ─┐
		DON'T KNOW . . . . 8 ─┴─→ 710

242

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
709	Which method would you prefer to use?	PILLS .... 01 IUD .... 02 INJECTIONS .... 03 DIAPHRAGM/FOAM/JELLY .... 05 CONDOM .... 06 FEMALE STERILIZATION .... 07 CALENDAR METHOD .... 09 WITHDRAWAL .... 10 OTHER _____ 96 (SPECIFY) UNSURE 98	→711A
710	What is the main reason that you think you will never use a method?	NOT MARRIED .... 11 FERTILITY-RELATED REASONS INFREQUENT SEX .... 22 MENOPAUSAL/HYSTERECTOMY .... 23 SUBFECUND/INFECUND .... 24 WANTS (MORE)CHILDREN .... 26 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 PREFER TO USE AN ABORTION .... 61 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	→711A

243

711	Would you ever use a method if you were married?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	
711A	Would you have an abortion if you unintentionally become pregnant sometimes in the future?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	
711B	Would you prefer to use a method in the future or rely on abortion, or do neither?	RELY ON ABORTION . . . . 2 ──────► 711D PREFER TO DO NEITHER . . . . 3 ──────► 712 DON'T KNOW . . . . 8 ──	

711C	What is the main reason that you would prefer to rely on a method rather than on abortion i the future?	LESS DETRIMENTAL ON HEALTH 1
		 CONTRACEPTION IS RELIABLE ENOUGH 2
		 LESS EXPENSIVE THAN ABORTION 3
		 MORE READILY AVAILABLE 4
		 DOESN'T WANT CONCEIVED CHILD TO DIE 5
		 OTHER 6
		      SPECIFY
		 DON'T KNOW 8
		 ───────────────────
		      (SPECIFY)
			──────► 712

711D	What is the main reason you would prefer to rely on abortion rather than on contraception in the future?	AFRAID OF CONTRACEPTION SIDE EFFECTS . . . . . 1 ABORTION IS LESS EXPENSIVE . . . . 2 CONTRACEPTION IS NOT RELIABLE . . . . 3 OTHER ─────────────────── 6 SPECIFY DON'T KNOW 8	

244

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP

712

CHECK 222

HAS LIVING CHILDREN ☐   NO LIVING CHILDREN ☐

If you could go back to   If you could choose exactly
the time you did not have   the number of children to
any children and could   have in your life, how many
choose exactly the number   would that be?
of children to have in
your whole life,
how many would that be?

PROBE FOR A NUMERIC RESPONSE.

NUMBER....................... ☐☐

OTHER _____96 ——→ 714
　　　　(SPECIFY)

713

How many of these children would you like to be boys, how many would you like to be girls and for how many would
it not matter?

BOYS

NUMBER..................... ☐☐

OTHER _____96
　　　　(SPECIFY)

GIRLS

NUMBER..................... ☐☐

OTHER _____96
　　　　(SPECIFY)

EITHER

NUMBER..................... ☐☐

OTHER _____96
　　　　(SPECIFY)

245

714	Would you say that you approve or disapprove of couples using a method to avoid getting pregnant?	APPROVE 1
		DISAPPROVE. 2
		NO OPINION 3

715	Is it acceptable or not acceptable to you for information on contraception to be provided:
	     On the radio?
	     On the television?			

		ACCEP-TABLE	NOT ACCEP-TABLE	DK
		RADIO 1	2	8
		TELEVISION 1	2	8

716	In the last few months have you heard about contraception:
	     On the radio?
	     On the television?
	     In a newspaper or magazine?
	     From a poster?
	     From leaflets or brochures?		

		YES	NO
		RADIO 1	2
		TELEVISION 1	2
		NEWSPAPER OR MAGAZINE. 1	2
		POSTER 1	2
		LEAFLETTERS OR BROCHURES . . 1	2

718	In the last few months have you discussed contraception with your friends, neighbors, or relatives?	YES. 1
		NO. . . . . 2 ⟶ 720

719	With whom? Anyone else? RECORD ALL MENTIONED	HUSBAND/PARTNER. . . . . A
		MOTHER . . . . B
		FATHER. C
		SISTER(S) . . . . D
		BROTHER(S) . . . . E
		DAUGHTER. . . . . F
		MOTHER-IN-LAW . . . . G
		FRIENDS/NEIGHBORS . . . . H
		OTHER _____ X
		(SPECIFY)

246

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP

720 CHECK 602

CURRENTLY MARRIED ☐   LIVING WITH A MAN ☐   NOT IN UNION ☐ ────────────────────→ 801

721

Spouses/partners do not always agree on everything.
Now I want to ask you about your husband's/partner's views on contraception.
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

722

How often have you talked to your husband/partner about contraception in the past year?

NEVER. 1

ONCE OR TWICE 2

MORE OFTEN. 3

723

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

247

724	What do you think is the attitude (approve or disapprove) of the following groups towards the practice of induced abortion:	APPROVE	DISAPPROVE	NEUTRAL	DON'T KNOW
	religious organizations in Kyrgyzstan?	1	2	3	8
	aksakals (elderly people)?	1	2	3	8
	local community leaders?	1	2	3	8
	politicians?	1	2	3	8
	your relatives?	1	2	3	8

725	What do you think is the attitude (approve or disapprove) of the following groups towards the family planning:	APPROVE	DISAPPROVE	NEUTRAL	DON'T KNOW
	religious organizations in Kyrgyzstan?	1	2	3	8
	aksakals (elderly people)?	1	2	3	8
	local community leaders?	1	2	3	8
	politicians?	1	2	3	8
	your relatives?	1	2	3	8

726	If you thought that the religious organizations, elderly people or community leaders in your area were against induced abortion, would you be reluctant to have an induced abortion or would it not matter to you?	RELUCTANT . . . . 1 WOULDN'T MATTER . . . . 2 DON'T KNOW 8

727	If you thought that the religious organizations, elderly people or community leaders in your area were against family planning, would you be reluctant to use methods of contraception or would it not matter to you?	RELUCTANT . . . . 1 WOULDN'T MATTER . . . . 2 DON'T KNOW 8

248

Section 8. HUSBAND'S BACKGROUND AND WOMAN'S WORK

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP

801 CHECK 602 AND 604

CURRENTLY MARRIED/ LIVING WITH A MAN ☐

FORMERLY MARRIED/ LIVED WITH A MAN ☐ → 803

NEVER MARRIED AND NEVER IN UNION ☐ → 809

802 How old was your husband/partner on his last birthday?

AGE . . . . ☐☐

803 Did your (last) husband/partner ever attend school, technikum, or institute?

YES 1

NO . . . . 2 → 806

804 What was the highest level of school he attended?

PRIMARY/SECONDARY 1
SECONDARY-SPECIAL 2
HIGHER 3
DON'T KNOW . . . . 8 → 806

805 How many years/classes/courses he completed at that level?

YEARS . . . . ☐☐
DON'T KNOW 98

806 What is (was) your (last)husband/partner's occupation?
That is, what kind of work does (did) he mainly do?

_____ ☐☐

_____

807 CHECK 806

WORKS (WORKED) IN AGRICULTURE ☐

DOES(DID) NOT WORK IN AGRICULTURE ☐ → 809

808 (Does/did) your husband/partner work mainly on the state land or on his own land, or on family land, or (does/did) he rent land?

STATE LAND 1
OWN LAND 2
FAMILY LAND 3
RENTED LAND 4

249

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP

| No. | QUESTIONS AND FILTERS | CODING CATEGORIES | SKIP |

809 — Aside from your own housework, are you currently working?

IF NOT: Are you on maternity leave?

YES............................... 1 ——→812

NO................................ 2

MATERNITY LEAVE.................... 3 ——→812

---

810 — As you know, some women take up jobs for which they are paid in cash or kind. Others sell things, have a small busiess 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 ——→812

NO................................ 2

---

811 — Have you done any work in the last 12 months?

YES................................ 1

NO . . . . 2 ——→826

250

812 — What is your occupation, that is, what kind of work do you mainly do?

_____ ☐☐

_____

_____

---

813 — CHECK 812

WORKS IN AGRICULTURE ☐   DOES NOT WORK IN AGRICULTURE ☐ ————————————→ 815

---

814 — Do you work mainly on the state land or on your own land, or on family land, or do you rent land?

STATE LAND 1

OWN LAND 2

FAMILY LAND 3

RENTED LAND 4

815	Are you public servant, or do you work on state enterprise, a prvate firm or enterprise owned by yourself, your husband, member of your family, or by someone else, or are you self-employed?	GOVERNMENT/STATE ENTERPRISE . . . . 1 FAMILY/OWN BUSINESS . . . . 2 PRIVATE FIRM/PERSON . . . . 3 SELF-EMPLOYED 4	
816	Do you usually work throughout the year, or do you work seasonally, or only once in a while (episodically)?	THROUGHOUT THE YEAR . . . . 1 ——→ SEASONALLY . . . . 2 ONCE IN A WHILE (EPISODICALLY) . . . . 3 ——→	818 819
817	During the last 12 months, how many months did you work?	NUMBER OF MONTHS . . . . ☐☐	
818	(In the months you worked,) How many days a week did you usually work?	NUMBER OF DAYS . . . . ☐ ——→	820
819	During the last 12 months, approximately how many days did you work?	NUMBER OF DAYS . . . . ☐☐☐	
820	Do you earn cash for your work? PROBE: DO YOU MAKE MONEY FOR WORKING?	YES . . . . 1 NO . . . . 2 ——→	823

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP

822

CHECK 602

CURRENTLY MARRIED/ 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?

NOT MARRIED. NOT LIVING WITH A MAN ☐

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

823

Do you usually work at home or away from home?

HOME 1

AWAY 2

824

CHECK 223: IS THERE A CHILD WHO IS AGE 5 OR LESS?

YES ☐   NO ☐ →826

824A

Does (NAME OF YOUNGEST CHILD) live with you?

YES 1

NO. . . . . 2 → 826

825

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

BABY SITTER 08

CHILD IS IN CHILDCARE 10

HAS NOT WORKED SINCE LAST BIRTH 95

OTHER 96

_____

(SPECIFY)

826

RECORD THE TIME

HOUR . . . . ☐☐

MINUTES . . . . ☐☐

252

ANTHROPOMETRY AND HEMOGLOBIN MEASUREMENT IN THE BLOOD

Section 9. HEIGHT AND WEIGHT

IN 901 AND 902 RECORD HEIGHT AND WEIGHT OF THE RESPONDENT.

901	RESPONDENT'S HEIGHT (IN CENTIMETERS)	□□□.□	
902	RESPONDENT'S WEIGHT (IN KILOGRAMS)	□□□.□	
903	RESULT	MEASURED . . . . 1 NOT MEASURED . . . . 2 REFUSED . . . . 3 OTHER_____ 6 (SPECIFY)	

904   CHECK 435

ONE OR MORE LIVING CHILDREN
BORN SINCE JANUARY 1994 □

NO LIVING CHILDREN
BORN SINCE JANUARY 1994 □ ────────────────────→ 1001

IN 905 RECORD THE LINE NUMBER FOR EACH CHILD BORN SINCE JANUARY 1994 AND STILL ALIVE. IN 906 AND 907 RECORD THE
NAME AND BIRTH DATE OF THE LIVING CHILDREN. IN 909 AND 911 RECORD HEIGHT AND WEIGHT OF THE LIVING CHILDREN.
IF THERE ARE MORE THAN TWO LIVING CHILDREN BORN SINCE JANUARY 1994 USE ADDITIONAL FORMS.

		☐1 YOUNGEST LIVING CHILD	☐2 NEXT-TO-YOUNGEST LIVING CHILD
905	LINE NUMBER FROM 434	□□	□□
906	NAME FROM 435	(NAME) _____	(NAME) _____
907	DATE OF BIRTH FROM 215, AND ASK FOR DAY OF BIRTH	DAY. . . . . MONTH. . . . . YEAR.	DAY. . . . . MONTH. . . . . YEAR. . . . .

254

908	BCG SCAR ON TOP OF SHOULDER	NO SCAR. . . . . 1 SCAR 1 - 4 mm . . . . 2 SCAR 5 mm AND MORE 3	NO SCAR. . . . . 1 SCAR 1 - 4 mm . . . . 2 SCAR 5 mm AND MORE 3
909	HEIGHT (IN CENTIMETERS)	☐☐☐.☐	☐☐☐.☐
910	WAS LENGTH/HEIGHT OF CHILD MEASURED LYING DOWN OR STANDING UP?	LYING . . . . 1 STANDING 2	LYING . . . . 1 STANDING 2
911	WEIGHT (IN KILOGRAMS)	☐☐.☐	☐☐.☐
912	DATE WEIGHED AND MEASURED	DAY . . . . ☐☐ MONTH . . . . ☐☐ YEAR . . . . ☐☐	DAY . . . . ☐☐ MONTH . . . . ☐☐ YEAR . . . . ☐☐
913	RESULT	MEASURED . . . . 1 CHILD IS SICK . . . . 2 CHILD NOT PRESENT. . . . . 3 CHILD REFUSED . . . . 4 MOTHER REFUSED . . . . 5 OTHER _____ 6 (SPECIFY)	MEASURED . . . . 1 CHILD IS SICK . . . . 2 CHILD NOT PRESENT. . . . . 3 CHILD REFUSED . . . . 4 MOTHER REFUSED . . . . 5 OTHER _____ 6 (SPECIFY)

914   NAME OF MEASURER: _____ ☐☐   NAME OF ASSISTANT: _____ ☐☐

LETTERHEAD OF THE INSTITUTE OF OBSTETRICS AND PEDIATRICS

Dear Respondent:

The Institute of Obstetrics and Pediatrics is conducting Demographic and Health Survey in Kyrgyz Republic. A study of anemia among the women and their children is part of this program. We ask you to participate in this program, which will assist the Ministry of Health of Kyrgyz Republic to develop the specific measures to prevent and treat anemia.

Anemia is a disease, which is characterized by a low count of red blood cells. It may have adverse effects on heart, lung and other organs and can be especially damaging during the pregnancy and delivery. Therefore, it is of interest of a women that the anemia will be diagnosed as early as possible.

Today, thanks to the new technology, it is possible to rapidly (within a few minutes) diagnose this disease. A low level of hemoglobin (less than 11g/dL) can be determined on the basis of a single drop of blood.

If you decide to participate in this program, we will ask you to provide a drop of blood from your finger for the analysis. Also, if you have a child of age 3 or less, please let our nurse to obtain drop of blood from him for anemia diagnosis. The procedure will be done by sterile instruments. Perhaps you will feel a minor and short pain during the finger prick and some soreness afterwards. The blood will be analyzed using the new sophisticated American equipment, Hemocue. The result of analysis will be available within the minutes after the blood is taken and assessed, and we will keep the results confidential.

If you decide to participate in this program, please sign at the bottom of this form that you agree to provide a drop of blood and allow us to obtain drop of blood from your child. If you decide not to participate, it is your right, and we will respect your choice.

I am _____
　　　　　　Last name,　　　　　　　　First name,　　　　　Sirname

agree to donate a drop of blood for the purpose of anemia diagnosis. I also allow a drop of blood to be taken from by child (children) for the purposes of anemia diagnosis.

Signature

Date "_____"　_____1997

Section 10. HEMOGLOBIN MEASUREMENT IN THE BLOOD

ALL INTERVIEWED WOMEN ARE ELIGIBLE FOR HEMOGLOBIN MEASUREMENT. IN 1001 RECORD RESPONDENT'S HEMOGLOBIN LEVEL

1001	RESPONDENT'S HEMOGLOBIN LEVEL (G/DL)	☐☐.☐	
1002	RESULT	MEASURED .... 1 NOT MEASURED .... 2 REFUSED .... 3 OTHER _____ 6 (SPECIFY)	

1003	CHECK 435		
	ONE OR MORE LIVING CHILDREN BORN SINCE JANUARY 1994 ☐	NO LIVING CHILDREN BORN SINCE JANUARY 1994 ☐ —————————————→ 1009	

IN 1004 RECORD THE LINE NUMBER FOR EACH CHILD BORN SINCE JANUARY 1994 AND STILL ALIVE. IN 1005 RECORD THE NAMES OF THE LIVING CHILDREN. IN 1006 RECORD THE HEMOGLOBIN LEVEL IN THE BLOOD OF THE LIVING CHILDREN.
IF THERE ARE MORE THAN TWO LIVING CHILDREN BORN SINCE JANUARY 1994 USE ADDITIONAL FORMS.

		[1] YOUNGEST LIVING CHILD	[2] NEXT-TO-YOUNGEST LIVING CHILD
1004	LINE NUMBER FROM 434	☐☐	☐☐
1005	NAME FROM 435	(NAME) _____	(NAME) _____
1006	HEMOGLOBIN LEVEL IN THE BLOOD (G/DL)	☐☐.☐	☐☐.☐

257

1007	RESULT		

MEA SU RED	1	MEA SU RED	1
CHIL D I S S ICK	2	CHIL D I S S ICK	2
CHILD NOT PRESENT.	3	CHILD NOT PRESENT.	3
CHILD REF USED	4	CHILD REF USED	4
MOTHER REFUSED	5	MOTHER REFUSED	5
OTHER _____	6	OTHER _____	6
(SP ECIFY)		(SP ECIFY)	

1008	NAME OF MEASURER	NAM E OF ASSISTAN T

1009	CHECK 1001 AND 1006

NO VALUES BELOW 7 G/DL ☐   ONE OR MORE VALUE BELOW 7 G/DL ☐ ─────────────────→ CONS ENT FOR M NO 2

258

RECORD THE RESULTS OF HEMOGLOBIN MEASUREMENT, TEAR OFF HERE AND PRESENT THIS PORTION TO THE RESPONDENT

- -

INSTITUTE OF OBSTETRICS AND PEDIATRICS
RESULTS OF HEMOGLOBIN MEASUREMENT IN THE BLOOD

Date _____ _____ 1997

Name	Respondent	Last child	Next-to-youngest child
Hemoglobin level in the blood (G/DL)	☐☐ . ☐ You have	☐☐ . ☐ Your child has	☐☐ . ☐ Your child has
WHO CLASSIFICATION OF ANEMIA			
Normal level Hb level above 11 G/DL	Normal level	Normal level	Normal level
Mild anemia Hb (10-11G/DL)	Mild anemia	Mild anemia	Mild anemia
Moderate anemia Hb (7-10 G/DL)	Moderate anemia	Moderate anemia	Moderate anemia
Severe anemia Hb (less than 7 G/DL)	Severe anemia	Severe anemia	Severe anemia

In case of severe anemia (Hb level less than 7 G/DL), we recommend you to immediately contact your doctor.

If you have any question about hemoglobin measurement procedure, please call us at (312)224-423, or write to: Institute of Obstetrics and Pediatrics, Ministry of Health of Kyrgyz Republic, 1, Togolok Moldo St., Bishkek, Kyrgyz Republic

LETTERHEAD OF THE INSTITUTE OF OBSTETRICS AND PEDIATRICS

Dear Respondent:

We detected a low level of hemoglobin in your (your child's) blood. This indicates that you (your child) have developed severe anemia, which is a serious health problem. We would like to inform the doctor at the health care facility in your area about your condition. This will assist you to obtain appropriate further diagnosis and treatment of your (your child's) condition.

If you agree with this please sign at the bottom of this form.

Thank you for your cooperation.

I am

_____
        Last name,   First name,   Sirname

agree that the information about the level of hemoglobin in my (my child's) blood will be disclosed to the doctor at the local health care facility.

Signature

Date "_____" _____1997