Kazakstan

Demographic and Health Survey 1995

National Institute of Nutrition

Academy of Preventive Medicine of Kazakstan

DHS

Demographic and Health Surveys
Macro International Inc.

World Summit for Children Indicators: Kazakstan 1995

		Value
BASIC INDICATORS		
Childhood mortality	Infant mortality rate	40 per 1,000
	Under-five mortality rate	46 per 1,000
Maternal mortality	Maternal mortality ratio	77 per 100,000[1]
Childhood undernutrition	Percent stunted (of children under 3 years)	15.8
	Percent wasted (of children under 3 years)	3.3
	Percent underweight (of children under 3 years)	8.3
Clean water supply	Percent of households within 15 minutes of a safe water supply[2]	86.6
Sanitary excreta disposal	Percent of households with flush toilets or VIP latrines	42.6
Basic education	Percent of women 15-49 with completed primary education	98.6
	Percent of men 15-49 with completed primary education	98.8
	Percent of girls 6-12 attending school	81.3
	Percent of boys 6-12 attending school	80.4
	Percent of women 15-49 who are literate	99.8
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	8.1
	Percent of children who live in single adult households	4.1
SUPPORTING INDICATORS		
Women's Health		
Birth spacing	Percent of births within 24 months of a previous birth[3]	34.3
Safe motherhood	Percent of births with medical prenatal care	92.5
	Percent of births with prenatal care in first trimester	58.9
	Percent of births with medical assistance at delivery	99.6
	Percent of births in a medical facility	98.4
	Percent of births at high risk	38.7
Family planning	Contraceptive prevalence rate (any method, married women)	59.1
	Percent of currently married women with an unmet demand for family planning	15.7
	Percent of currently married women with an unmet need for family planning to avoid a high-risk birth	12.5
Nutrition		
Maternal nutrition	Percent of mothers with low BMI	7.9
Low birth weight	Percent of births at low birth weight (of those reporting numeric weight)	9.1
Breastfeeding	Percent of children under 4 months who are exclusively breastfed	12.0
Iodine	Percent of households with iodised salt	52.9
Child Health		
Diarrhea control	Percent of children with diarrhea in preceding 2 weeks who received oral rehydration therapy (sugar-salt-water solution)	31.2
Acute respiratory infection	Percent of children with acute respiratory infection in preceding 2 weeks who were seen by medical personnel	47.7

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

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National Institute of Nutrition
Almaty, Kazakstan

Academy of Preventive Medicine of Kazakstan
Almaty, Kazakstan

Macro International Inc.
Calverton, Maryland USA

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This report summarizes the findings of the 1995 Kazakstan Demographic and Health Survey (KDHS) conducted by the National Institute of Nutrition [Kazakstan]. Macro International Inc. provided technical assistance. Funding was provided by the U.S. Agency for International Development.

The KDHS is part of the worldwide Demographic and Health Surveys (DHS) program, which is designed to collect data on fertility, family planning, and maternal and child health. Additional information about the Kazakstan survey may be obtained from the National Institute of Nutrition, 66 Klotchkov St., Almaty, Kazakstan 480008 (Telephone: (73272) 429-111; Fax: (73272) 420-720). Additional information about the DHS program may be obtained by writing to: DHS, Macro International Inc., 11785 Beltsville Drive, Suite 300, Calverton, MD 20705 (Telephone: 301-572-0200; Fax: 301-572-0999).

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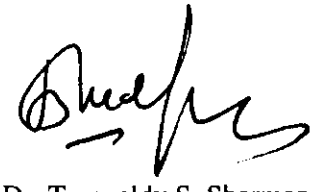
PREFACE

The 1995 Kazakstan Demographic and Health Survey (KDHS) was the first national level population and health survey in Kazakstan. The purpose of the survey was to provide the Ministry of Health of Kazakstan 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. This is especially important now during this the time of economic transition which involves virtually all aspects of life for the people of Kazakstan. The survey provides data important to the assessment of the overall demographic situation in the country. It is expected that the findings of the KDHS will become a useful source of information necessary for the ongoing health care reform in Kazakstan.

The successful completion of the KDHS and publication of this volume is due to the contribution of many people. I would like to express appreciation to the KDHS senior technical staff: Drs. Nailya Karsybekova and Temirkhan Bekbosynov; KDHS field coordinators: Drs. Igor Tsoy, Yuri Sinyavskyi, Shamshuddin Balgimbekov, and Ms. Nagima Esenalinova; and to all interviewing teams and data entry groups for their devotion and sincere efforts in accomplishing the survey activities. The survey fieldwork was completed smoothly and successfully with the support of the Ministry of Health, and also with the help of government officials and public health workers at the levels of *oblasts, raions* and villages of Kazakstan. Our thanks are also due to the members of the National Survey Advisory Committee and to all specialists who were involved in the survey and contributed to its success.

The KDHS is part of an international program that has executed more than 60 national-level surveys around the world. Kazakstan is the first country among the republics of the former Soviet Union to participate in this international program. The KDHS would not have been feasible without financial support of the U.S. Agency for International Development and technical assistance which was provided by the Demographic and Health Surveys (DHS) program of Macro International Inc. 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. I would also like to thank the following Macro staff: Drs. Almaz Sharmanov and Kia Weinstein for assisting with questionnaire development, fieldstaff training, analysis of the survey results, and writing chapters of 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 Ms. Anne Cross and Dr. Elisabeth Sommerfelt for their valuable reviewing of various chapters of the report.

Many others we have not mentioned have also put long hours into ensuring the successful completion of this task; their names are listed in Appendix D.



Dr. Toregeldy S. Sharmanov
KDHS National Director
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SUMMARY OF FINDINGS

Toregeldy S. Sharmanov

The 1995 Kazakstan Demographic and Health Survey (KDHS) is a nationally representative survey of 3,771 women age 15-49. Fieldwork for the KDHS was conducted from May to September 1995. The KDHS was sponsored by the Ministry of Health (MOH), Republic of Kazakstan and was funded by the United States Agency for International Development. The National Institute of Nutrition implemented the survey with technical assistance from the Demographic and Health Surveys program. The Kazakstan Academy of Preventive Medicine participated in analysis and report writing.

The purpose of the KDHS was to develop an information base to be used by the MOH in developing policies pertaining to the health and nutrition of women and children. The KDHS provides information on many factors which determine the health status of women and children such as fertility, contraception, induced abortion, maternal care, infant mortality, and nutritional status.

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, ethnicity, etc. Additionally, the survey provides statistics on some issues not previously available in Kazakstan: for example, breastfeeding practices and anemia status of women and children. Thus, existing data and the KDHS data are complementary; when considered together, they provide a more complete picture of the health conditions in Kazakstan than was previously available.

Decreasing Fertility. Survey results indicate a total fertility rate (TFR) for all of Kazakstan of 2.5 children per woman. Fertility levels differ for different population groups. The TFR is lowest among women in Almaty City (1.5 children per woman) and the North and East Region (1.8), intermediate in the West and Central Regions (2.7 each), and highest in the South Region (3.4). The TFR for ethnic Russian women (1.7 children per woman) is substantially lower than for Kazak women (3.1).

The results of the 1989 Census and the 1995 KDHS show that fertility has declined in Kazakstan over the past five years from a TFR of 2.9 to 2.5 children per woman. Over the same period, the TFR among ethnic Kazaks has declined from 3.6 to 3.1 and among ethnic Russians from 2.2 to 1.7. The declining trend in fertility can also 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 45-49 is 3.4 children which is nearly one child more than the current TFR (2.5).

Overall, one-third of non-first births (34 percent) in Kazakstan take place within 24 months of the previous birth. Birth intervals are significantly longer among births to Russian mothers (median interval length of 44 months) than among Kazak mothers (median interval length of 28 months). Births to urban women have a median interval length of 39 months, while births to rural women have a median interval length of 29 months.

The age at which women in Kazakstan begin childbearing has not changed significantly over time. Overall, approximately 15 percent of women have their first birth at age 18 or 19, an additional 25-30 percent have their first birth at age 20 or 21, and 25-30 percent at age 22-24.

The majority of married women in Kazakstan (60 percent) don't want to have more children, and a large majority of women (79 percent) want to either delay their next birth (19 percent) or stop childbearing altogether. These are the women who are potentially in need of some method of family planning.

Decreasing Childhood Mortality. In the KDHS, 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 (such as the beating of the heart or movement of voluntary muscles) after separation from the mother. Infant deaths are deaths of live-born infants under one year of age (United Nations, 1992).

For the period 1990-94, infant mortality in Kazakstan is estimated at 40 infant deaths per 1,000 births. The estimates of neonatal and postneonatal mortality are about equal at 20 per 1,000. The estimate of child mortality (ages 1-5) is much lower at 6 deaths per 1,000 population.

During the period between 1980-1984 and 1990-1994, the infant mortality rate in Kazakstan declined from 44 to 40 per 1,000 births (by about 10 percent). All of this decline occurred in the postneonatal period. The pace of mortality decline was more pronounced for children (ages 1-5), and over the 10-year period, child mortality rates fell from 10 to 6 per 1,000 population (by about 38 percent).

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. Only if a premature birth survives for seven days is the child classified as a live birth. 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 KDHS.

Because of this difference, the infant mortality estimates of the MOH are consistently about 30 percent lower than the KDHS estimates. Nevertheless, the 15 percent decline in the MOH estimates between 1980-84 (32 per 1,000) and 1990-94 (27) is of the same order of magnitude as the decline indicated by the KDHS estimates.

Increasing Use of Contraception. Knowledge of contraceptive methods is very high among women in Kazakstan. Knowledge of at least one method is nearly universal (98 percent of respondents know of at least one method). High levels of knowledge are the norm for women of all ages, all regions of the country, all educational levels, and all ethnicities. Women have knowledge of, on average, five methods of contraception.

Among currently married women, 84 percent report having used a method of contraception at some time. The women who are the most likely to have ever used a method of contraception are those in the broad age group 25-44 (83-90 percent of these women have used a method of contraception at some time).

Overall, among currently married women, 59 percent report that they are currently using a contraceptive method. Forty-six percent are using a modern method of contraception and another 13 percent are using a traditional method. The IUD is by far the most commonly used method; two out of every three currently married women who are using contraception are using the IUD. One out of five currently married women who are using contraception are using either periodic abstinence, withdrawal, or douche.

The level of modern contraceptive use is similar for women of various population subgroups. Most of the differentials observed in overall levels of use are due to differentials in use of traditional methods. For example, Kazak and Russian women are equally likely to be using a modern method of contraception (47 and 45 percent, respectively); however, Russian women are more likely than Kazak women to be using a

traditional method (20 and 7 percent, respectively), resulting in a higher overall level of use among Russian women.

Statistics from the MOH show that, between 1988 and 1993, the percent of women of reproductive age who were IUD and pill users increased by approximately 48 percent from 20 to 29 percent.

The vast majority of women obtain their contraceptives through the public sector (92 percent). Forty-four percent of users obtain their method from a hospital or polyclinic, 26 percent from a women's consulting center, and 19 percent from public pharmacies. The source where women obtain their methods depends on the method they are using. Most women using IUDs obtain them at hospitals (34 percent) or women's consulting centers (31 percent). Pharmacies supply 58 percent of pill users and 60 percent of condom users.

Of the 41 percent of currently married women who are not using contraception, about half (48 percent) report that they intend to use contraception in the future; 28 percent within the next 12 months, 17 percent at some more distant time, while the remaining 3 percent are unsure when they will use a method. The majority (79 percent) of nonusers who intend to use in the future indicate that the IUD is their preferred method.

Decreasing Levels of Induced Abortion. As in most of the republics of the former Soviet Union, induced abortion has been a primary means of fertility control in Kazakstan. In a manner analogous to the analysis of the fertility 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 at the national level and for various population subgroups.

At current rates, a woman in Kazakstan will have an average of nearly two abortions (1.8) over her lifetime. The TAR is higher in urban areas (2.0 abortions per woman) than in rural areas (1.5). Additionally the TAR is substantially higher among ethnic Russian women (2.7) than among ethnic Kazak women (1.1).

As expected, levels of abortion and fertility are inversely correlated. In the high-fertility South Region, the TAR is lowest (0.9 abortions per woman). In the West and Central Regions where fertility levels are intermediate, abortion rates are also intermediate (1.0 and 1.6, respectively), while in the relatively low fertility areas of the North and East Region and Almaty City, abortion rates are highest (2.5 and 3.0, respectively).

The KDHS data indicate a 20 percent decline in the general abortion rate between the time periods 1986-90 and 1993-95. This is in agreement with the abortion statistics published by the MOH, which indicate a 17 percent decline in induced abortion over the same time periods.

A finding of considerable interest which is based on both KDHS and MOH data concerns the link between the use of contraception and the level of abortion. The data indicate that over an interval of about five years, the pill and IUD prevalence rate in Kazakstan has increased by 32 percent, and over the same period the abortion rate has declined by 15 percent. This is clear and convincing evidence that contraceptive use has been a substitute for abortion.

Maternal and Child Health. Kazakstan 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's counseling centers, and doctor's assistant/midwife posts (FAPs). There is an extensive network of the latter mentioned facilities throughout the rural areas.

Virtually all births in Kazakstan (98 percent) are delivered at health facilities: 96 percent in delivery hospitals and another 2 percent in either general hospitals or FAPs. Only 2 percent of births are delivered at home. Almost all births (99 percent) are delivered under the supervision of medically trained persons: 78 percent by a doctor and 21 percent by a nurse or midwife.

As expected, the survey data indicate that a high proportion of respondents (93 percent) receive antenatal care from professional health providers: the majority from a doctor (69 percent) and a significant proportion from a nurse or midwife (23 percent). Only 7 percent of women report no antenatal care. The general pattern in Kazakstan 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 11.

The practice in Kazakstan is to keep child health cards at the health facilities rather than in the possession of the child's mother so that most of the information on vaccination coverage in the KDHS is based on mother's recall. Among children 12-23 months of age, mothers report that a high proportion of children have received the BCG vaccine (97 percent), the first dose of DPT (98 percent), and polio (100 percent). However, approximately half of those who started the DPT and the polio series did not finish. In the case of the measles vaccine, 72 percent of children 12-23 months of age have been vaccinated.

Nutritional Status. Breastfeeding is almost universal in Kazakstan; 96 percent of children born in the three years preceding the survey are breastfed. Overall, 10 percent of children are breastfed within an hour of delivery and 40 percent within 24 hours of delivery. The median duration of breastfeeding is lengthy (14 months). However, durations of exclusive breastfeeding, recommended by the World Health Organization, are short (0.4 months).

Supplementary feeding starts early in Kazakstan. At age 0-3 months, a significant proportion of breastfeeding children are given infant formula (20 percent) and powdered or evaporated milk (17 percent). By 4-7 months of age, 25 percent of breastfeeding children are given foods high in protein (meat, poultry, fish, and eggs) and almost half are given cereals and fruits or vegetables.

Among nonbreastfeeding children age 0-3 years, a high proportion are given powered or evaporated milk in the last 24 hours (about 80 percent), and after the first birthday, a high proportion receive high protein foods (about 80 percent of children).

In the KDHS, the height and weight of children under three years of age was measured. These data, in conjunction with information on age, are used to determine the nutritional status of children, i.e., 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 Kazakstan, the survey found that 16 percent of children are severely or moderately stunted and 3 percent are severely or moderately wasted.

Particularly in terms of the stunting index, undernutrition differs between subgroups of children. Moderate or severe stunting is found to be high among children 12-23 months of age (23 percent) compared to infants under 6 months of age (4 percent) and age 6-11 months (10 percent), and among children born after a birth interval of less than 24 months (28 percent) compared to those born after longer birth intervals of 24-47 months (20 percent) and 48 months or more (7 percent). Moderate or severe stunting is also particularly high among children in rural areas (22 percent), in the South and Central Regions (23 and 22 percent, respectively), and among the children of ethnic Kazak women (21 percent).

Anemia Status. Testing of women and children for anemia was one of the major efforts of the 1995 KDHS. Anemia is recognized as a major public health problem throughout the world, and has been considered a major public health problem in Kazakstan for decades. Nevertheless, this was the first anemia study in Kazakstan done on a nationally representative sample. The study involved hemoglobin (Hb) testing for anemia using the Hemocue system.

Approximately, half (49 percent) of the women in Kazakstan suffer from some degree of anemia. Thirty-seven percent of these women have mild anemia, 11 percent have moderate anemia, and 1 percent are severely anemic (Hb level less than 7.0 g/dl). The highest overall rate of anemia (59 percent) is found in the West Region while Almaty City has the lowest overall rate (38 percent). With respect to ethnicity, the rate of anemia is higher among ethnic Kazak women (57 percent) than among ethnic Russian women (42 percent) and women of other ethnic groups (43 percent).

Sixty-nine percent of children under the age of three in Kazakstan suffer from some degree of anemia. About the same proportions of children have mild (30 percent) and moderate anemia (34 percent). A smaller, but substantial, proportion of children is severely anemic (6 percent). As is the case for women, the highest overall rate of anemia among children is found in the West Region (81 percent) and the lowest rate in Almaty City (48 percent). Ethnic Kazak children have higher overall rates of anemia (78 percent) than ethnic Russian children (59 percent) or children of other ethnic groups (55 percent). Perhaps the most significant finding of the study is the high rate of severe anemia among Kazak children (9 percent), while no ethnic Russian children are severely anemic, and the prevalence for other ethnic groups is 1 percent.

There are some demographic predisposing factors which increase the likelihood of anemia in children. These factors include the age of 12-23 months, high birth order, and having an anemic mother.


KAZAKSTAN
North Kazakstanskaya Oblast
RUSSIA
Koustanaiskaya Oblast
Kokchetauskaya Oblast
Pavlodarskaya Oblast
Akmolinskaya Oblast
West Kazakstanskaya Oblast
Tourgaiskaya Oblast
Karagandinskaya Oblast
East Kazakstanskaya Oblast
Aktiubinskaya Oblast
Atyrauskaya Oblast
Semipalatinskaya Oblast
Zhezkazganskaya Oblast
Caspian Sea
Taldy-Korganskaya Oblast
CHINA
Mangistauskaya Oblast
Aral Sea
Kzyl-Ordinskaya Oblast
Dzhambylskaya Oblast
Almatinskaya Oblast
South Kazakstanskaya Oblast
UZBEKISTAN
ALMATY CITY

CHAPTER 1

INTRODUCTION

Almaz T. Sharmanov

1.1 Geography, History, and Economy

1.1.1 Geography and Population

Kazakstan, the second largest republic after Russia in the former Soviet Union, has a territory of over 1 million square miles (2.7 million square kilometers). It borders Russia to the north and west, the Central Asian republics of Uzbekistan, Kyrgyzstan, and Turkmenistan to the south, and China to the east. The northern part of Kazakstan consists of grasslands, while most of the south and center consists of desert and steppe. Kazakstan has access to both the Caspian Sea and the Aral Sea and it is crossed by the Siberian river of Ertys, and the rivers of Esil, Oral, and Syr Darya (Goskomstat, 1996).

Kazakstan is divided into 19 administrative regions *(oblasts),* which are further broken down into 220 smaller administrative areas called *raions*. The country has a population of 16.5 million (Goskomstat, 1996). With 16.4 persons per square mile (6.4 per square kilometer), Kazakstan has one of the lowest population densities in the world. The population is comprised of more than 100 nationalities and ethnic groups. Forty-five percent of the population is Kazak, 35 percent Russian, 4 percent German, and 4 percent Ukrainian in origin. Other significant subpopulations are Uzbeks, Tatars, Uighuers, and Koreans. Traditional Kazak culture is influenced by Islam. The Russian population has a loose affiliation with the Russian Orthodox Church.

1.1.2 Pre-Soviet Kazakstan

Prior to the 20th century, the people of Kazakstan were mainly nomadic. For centuries, the Kazak people grazed their horses and sheep on the grasslands of the north and on the pastures of the south. In the 13th century, the Kazaks, who were originally Turkik speaking tribes, were invaded and influenced by the Mongols. The ethnic Kazak population is homogeneous in terms of its cultural traditions and language. It is common, however, to divide it into three major tribes or *zhoozes*: Uly (senior) Zhooz (southeastern Kazakstan), Orta (middle) Zhooz (central and northern Kazakstan), and Kishi (junior) Zhooz (western Kazakstan).

The Kazak state was formally established in the 16th century during the rule of Qasym-khan. Later, the representatives of all three Zhoozes, facing the threat of Dzhungar's conquest, gathered in Ulu-Tau (currently Dzhezkazgan *oblast*), and declared the nation's unification (Baishev et al., 1979). In the 18th century, Ablai-khan, the most eminent person in Kazak history, was able to politically unify the Kazak state. He was, however, the last independent Kazak khan, deriving his power solely from the Kazak people (Olcott, 1995). Beginning in the 18th century, the territory of Kazakstan was subject to Russian conquest and was incorporated into the Russian Empire. At the end of the 19th and beginning of the 20th centuries, Kazakstan was a destination of intensive migrations of Russian, Ukrainian, and Polish peasants.

1.1.3 Kazakstan During the Soviet Era

After the communist revolution of 1917, an autonomous republic was established in the territory of Kazakstan. In 1936, the territory became the Soviet Socialist Republic of Kazakhstan, member of the USSR. The Stalin era of collectivization of farmland in the 1920s and 1930s resulted in huge numbers of Kazaks starving due to losses of livestock and poor harvests. It has been estimated that 1,750,000 Kazaks (about 40 percent of Kazakstan's population) died as a result of famine and Stalin's repression (Abylgozhin et al., 1989). Prior to and during World War II, Stalin deported many Germans, Koreans, Chechens, and Crimean Tatars to Kazakstan from central Russia, the Far East, Caucasus, and Crimea. They now constitute a significant portion of Kazakstan's population.

In the mid-1950s, Nikita Khrushchev announced the Virgin Lands campaign which was designed to bring the enormous acreage of pasture land in Kazakstan under plow. The next 10 years brought another wave of immigrants from Russia, Byelorussia, and Ukraine to settle the Kazak steppes. Some 64 million acres of pasture were plowed and hundreds of collective farms were established, mainly in the central and northern areas of Kazakstan, which became major producers of grain. The southern part of Kazakstan remained populated mainly by Kazaks who produced cotton, fruits, and vegetables.

The industrial development of Kazakstan, initiated in the mid-1950s, benefitted from the country's abundance of natural resources. Kazakstan is one of the most mineral rich countries in the world, with deposits of copper, chromium, magnesium, iron ore, gold, titanium, lead, zinc, bauxite, and other minerals (UNDP, 1995). During the last three decades, Kazakstan has developed national industries in iron and steel production, chemical fertilizers, copper, machinery and construction of coal and hydroelectric plants.

The economic development of Kazakstan since the 1950s has been tremendously accelerated by the military industry and the space program. The Semipalatinsk region of Kazakstan was designated as the Soviet nuclear bomb testing zone. Baikonour, the area in the middle of Kazakstan's southern deserts, became a Soviet space harbor, similar to the United States' Cape Canaveral. The Soviet government considered Kazakstan's borders with China strategically important and stationed large numbers of troops along the border forming the Central Asian Military Zone.

Thus, two major demographic trends characterize Kazakstan in the 20th century: rapid urbanization and a shift in ethno-national structure. Kazakstan's present ethnic spectrum is the result of an intensive migration process, initiated and influenced by industrialization and political changes throughout Kazakstan's history. The migration process brought millions of ethnic Slavs, mostly Russians, who settled predominantly in the northern territories of Kazakstan and now constitute a majority of the population. The central and southern regions remain populated primarily by ethnic Kazaks.

1.1.4 Social Programs and the Educational System

During the Soviet era, Kazakstan developed advanced social and educational programs. In 1992, more than nine million people (about half of the population) were covered by some kind of social welfare and social security system, such as pensions, maternity leave, disability protection, etc. With a strong public commitment to education, which is free of charge, a high level of literacy is now nearly universal in Kazakstan. The 1989 Census reported a mean number of 9.7 years of schooling by the age of 25 (Goskomstat, 1990).

The country'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). In 1995, there were 8,801 schools operating in Kazakstan, more than two-thirds of which offered all three levels

of primary/secondary education. The national teacher/pupil ratio was estimated to be 1:11 (Goskomstat, 1996). 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. Those who finish all three levels of primary/secondary school can continue their education at a higher level—at universities or academic training institutes.

The secondary-special (vocational) educational system in Kazakstan includes 251 schools providing 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 profile and professional orientation of the student. In 1995, there were 65,200 students who were enrolled in these schools (Goskomstat, 1996).

In 1995, there were 71 universities and academic training institutes in Kazakstan offering formal higher education, and there were 260,000 students enrolled in these institutions (Goskomstat, 1996). Currently, the secondary-special and higher education systems are undergoing changes to meet a growing demand for new types of professional skills, particularly for professionals with market management and business administration skills.

1.1.5 Kazakstan During the Socioeconomic Transition

With the collapse of the former Soviet Union in 1991, Kazakstan was granted formal independence and became a sovereign republic. The country opened its doors to the world community and became a member of the United Nations and many other international organizations. The head of the newly independent state is the President, Mr. Nursultan Nazarbayev.

Under transition from a centrally-planned economy to a market economy, Kazakstan is now experiencing rapid social and economic changes. The process to date has produced disruption in most sectors of the economy, causing economic decline, inflation, and instability of the new national currency. Almost all sectors of the economy experienced dramatic decreases in production from 1991 to 1995. Not until the beginning of 1995 was an increase in the production of ferrous and nonferrous metallurgy and the chemical industries noticeable (Goskomstat, 1996).

The Government of Kazakstan liberalized consumer prices as part of an economic transition program. This induced tremendous inflation which was estimated at almost 50 percent per month in June 1994 for food and nonfood commodities. Despite the fact that the overall monthly inflation rate has fallen since 1994 to 2-5 percent in 1995-96, the increasing gap between personal income and the cost of living continues to affect most household budgets (Goskomstat, 1996).

The country's declining economy and budget deficits place downward pressure on expenditures for social programs, education, and health care (see also section 1.2.2. on the health care crisis). The inability of the Government to collect and maintain sufficient pension funds has led to new legislation that raises the retirement age from 55 to 58 years for women and from 60 to 63 for men by the year 2001.

The Government of Kazakstan, facing economic and social crisis, has initiated a number of activities to restructure the economy by attracting foreign investments and rebuilding economic relations with Russia and other former Soviet republics. In 1995, the Government of Kazakstan initiated the transfer of major enterprises, including Karaganda steel, Dzhezkazgan copper, and Donskoi chromium plants, to the management of foreign companies such as British Ispat Corporation and Korean Samsung. Such transfers are intended to assist in the move from a Soviet planned economic system to a market economy. Kazakstan has also urged other former Soviet republics to form a Euro-Asian Union comparable to the European Union. In

March 1996, Kazakstan signed an agreement with Russia, Byelorussia, and Kyrgyzstan to form a union intended to eliminate trade barriers and restore economic and financial relationships.

1.2 Health Care Sytem

1.2.1 Socialistic Health Care System

In 1978 the historic International Conference on Primary Health Care was held in Kazakstan under the aegis of the World Health Organization (WHO) and UNICEF. The Alma-Ata Declaration was drawn up and the "Health for All" strategy was developed, calling for primary care driven health systems that would guarantee equal access for all citizens (WHO, 1978). During the 1970s and early 1980s, Kazakstan became an example of how a multiethnic state in a developing and industrialized setting could achieve this goal. The system of comprehensive and planned health care that was developed in Kazakstan provided adequate access to health services and maintained a focus on prevention.

With six medical schools and 10 medical colleges, Kazakstan has been successful in training medical doctors, nurses, and other medical professionals. The country has reached one of the world's highest per capita rates of physicians and hospital beds. In 1995 there were 365 doctors per 100,000 population. Figures for the U.S., Japan, and China were 288, 225, and 154, respectively. The number of hospital beds was 1,169 per 100,000 population, which was also one of the world's highest rates (Ministry of Health, 1996).

The planned system, developed under the Soviet health care system, maintains a network of primary health care institutions. The network includes doctor's assistant/midwife post (FAP), district polyclinics, and rural hospitals at the primary level; district hospitals and dispensaries at the secondary level; and central hospitals and clinical research institutes at the highest level. It has proven efficient and successful in providing adequate health services for the majority of the population, including those residing in the most remote areas of Kazakstan. However, maintaining such a system depends entirely on substantial and continuous budgetary support, and requires enormous resources of manpower and managerial skill.

1.2.2 Health Care Crisis

Unfortunately, Kazakstan's declining economy has reduced health care expenditures. The country is currently experiencing a health care crisis and the system is continually threatened with severe financial cutbacks. The health care budget has declined to 1.1 percent of the Gross National Product (GNP) (Goskomstat, 1996). This compares with average health care expenditures of 6-10 percent of the GNP in most developed countries. Meanwhile, Kazakstan's GNP has also decreased tremendously in the past few years producing an even greater tightening of the budget (UNDP, 1995).

Since 1990, Kazakstan's health care system has become highly decentralized and less manageable. Due to lack of funding, some regions reduced the number of hospital beds and supplies of essential drugs and medical equipment. Physicians in Kazakstan are now paid less on average than factory workers. Hospitals and other health facilities are in poor condition; many are lacking in sanitary conditions, running water, and electricity (Barr and Field, 1996; Sharmanov et al., 1996).

The crude death rate in Kazakstan has increased from 7.7 deaths per 1,000 population in 1990 to 10.1 in 1995 (Goskomstat, 1996). Average life expectancy at birth decreased from 68.6 years (63.8 for men and 73.1 for women) in 1990 to 66.8 (60.7 for men and 71.1 for women) in 1994 (Ministry of Health, 1996). The major causes of death in Kazakstan are cardiovascular diseases, cancer, and respiratory diseases (in 1995 there were 484, 134, and 93 deaths per 100,000 population, respectively). While the incidence rate of infectious diseases such as diarrhea has declined, morbidity from noncommunicable diseases has risen in the

past decade. In 1995, 26 percent of people in Kazakstan had respiratory diseases and 4 percent had infectious diseases or parasite infestation.

Pulmonary tuberculosis is one of the most serious health problems in Kazakstan. The highest levels are observed in the northern and western regions. The number of new cases of tuberculosis increased from 59.7 per 100,000 population in 1994 to 67.1 in 1995. The overall morbidity rate from tuberculosis in Kazakstan in 1995 was 271.1 per 100,000 population, which was the highest in Central Asia, and one of the highest in the world (Ministry of Health, 1996). Drug-resistant forms of tuberculosis have become more prevalent in the past decade, resulting in high rates of mortality and disability.

Many of the health problems in Kazakstan have arisen from deteriorating environmental conditions. Radioactive contamination around the Semipalatinsk nuclear bomb testing zone, and agro-chemical pollution in the area of ecological crisis of the Aral Sea have provoked international attention over the last several years. There is great concern in the health community that malignant neoplasms and genetic and mental disorders in these geographic areas have increased significantly.

In addition to environmental factors, behaviors such as heavy smoking, excessive alcohol consumption, and a high-fat diet contribute significantly to the deteriorating health condition of the general population of Kazakstan. Nutrition-related diseases, particularly those caused by malnutrition and micronutrient deficiencies, are a major public health concern in Kazakstan, since they appear to be important predisposing factors for infectious diseases and underlying causes of many noncommunicable diseases. Among nutrition-related diseases, iron deficiency anemia has been considered a major health problem in Kazakstan for decades.

1.2.3 Health Care Reform

It has become clear that success in health care will not be solely determined by the number of physicians or hospital beds. Even if the medical care system is efficient and affordable, the health of the society will depend on its ability to cope with non-medical issues. The challenge for the Kazakstan Government is to reform the health system in such a way that it will be both financially viable and provide comprehensive service to the population at large, including the most vulnerable groups.

In April 1996, a national compulsory health insurance system was introduced in Kazakstan. The system has been developed to attract private funds to expand the health care sector and to move it away from government control. Under the new system, physicians are to operate within a group of private practitioners financed by the national insurance fund. Funds are meant to be employment-based, providing government funding for the elderly, students, the unemployed, and the disabled. Kazakstan is currently in the initial stages of transition from the former government-owned health care system, which fell into financial crisis, to the new system that is expected to be competitive and market-oriented.

Meanwhile, the Ministry of Health of Kazakstan is in the process of developing programs to restructure the primary health care system, and improve maternal, child, environmental, and occupational health. As part of an intersectoral approach in health care reform, the National Nutrition Policy has been developed by the National Institute of Nutrition with technical assistance from UNDP, UNICEF, and WHO (National Institute of Nutrition, 1996). The Policy outlines emerging nutrition and health issues in Kazakstan during economic transition and stresses the needs in such areas as maternal and child nutrition, development of iron and iodine fortification programs, promotion of breastfeeding, improvement of the national food control and nutrition surveillance systems, coordination of food production and marketing, food provision for socially deprived population groups, etc.

1.3 Maternal and Child Health and Family Planning

For many years, the Government of Kazakstan promoted policies to encourage women to have more children. Women in Kazakstan who had seven or more children were traditionally glorified and recognized as a "mother-hero" and provided with a number of benefits, including bonuses, housing assistance, extensive paid maternity leave, child benefits, support for day care, etc. Kazaks have historically been in favor of large families.

A long history of pronatalist policies and traditions provides the backdrop within which all fertility policies must be designed. First, a fertility program must be supported by adequate maternal and child health services. Second, any introduction of family planning approaches must address fears, voiced by national political groups, regarding the reduction of the proportion of ethnic Kazaks within the overall ethnic structure of Kazakstan. Therefore, the Ministry of Health of Kazakstan incorporates family planning within a more comprehensive program of maternal and child health services, without specifying any demographic targets.

To promote maternal and child health services, the Government of Kazakstan has built a nationwide multilevel network of health care facilities. The main health facility in this network that provides delivery assistance is the delivery hospital. Some births are delivered in the obstetrics/gynecology department of regular hospitals. In remote areas of Kazakstan, pre-doctoral delivery assistance is provided by the staff of doctor's assistant/midwife posts (FAPs). The major facilities responsible for antenatal care and family planning in urban areas are women's consulting centers and polyclinics. In rural areas, family planning services and antenatal care are the responsibility of the staff of rural hospitals and the FAPs. This system makes antenatal and delivery care available to women in virtually all regions, both urban and rural, including the remote areas of Kazakstan. Obstetricians and gynecologists in the facilities also provide family planning services; their main objectives are to reduce complications due to inadequately spaced pregnancies and to reduce the number of induced abortions.

Despite initial successes in improving maternal and child health and overall reductions in maternal and child mortality during the last two decades, Kazakstan maintains morbidity and mortality patterns typical of developing countries. For instance, almost 80 percent of children in Kazakstan reportedly had some illness in 1995, mainly respiratory or diarrheal disease (Ministry of Health, 1996). Many children suffer from various forms of malnutrition and micronutrient deficiency. The infant mortality rate, which has remained relatively static since 1980, was 26.8 per 1,000 live births in 1995, according to the data of the Kazakstan State Committee on Statistics (Goskomstat, 1996).

Data from the Kazakstan National Research Center on Maternal and Child Health show the 1994 and 1995 maternal mortality rates in Kazakstan to be 69.3 and 77.3 deaths per 100,000 live births, respectively. Most industrialized countries report rates of 3 to 10 deaths per 100,000 live births. The major causes of maternal death in Kazakstan are hemorrhage, induced abortion, extragenital diseases, and late gestosis, each accounting for 15 to 23 percent of the total deaths (Ministry of Health, 1996). Predisposing factors of maternal death are infection, extragenital diseases, malnutrition, iron-deficiency anemia, and other micronutrient deficiencies. Most of these maternal deaths could be prevented if steps were taken to identify high-risk pregnancies and implement preventive measures.

Induced abortion is a significant cause of maternal mortality in Kazakstan. It accounts for 19 percent (41 cases) of maternal deaths in 1995 (Ministry of Health, 1996). Almost half of the maternal deaths caused by induced abortion were related to cases of illegal abortions. The rate of induced abortion in Kazakstan is reported by the Ministry of Health Statistical Office at 54.7 per 1,000 women of reproductive age in 1995, similar to the high levels observed in most Eastern European countries.

Since the legalization of induced abortion in 1955, it has been a primary method of birth control in Kazakstan. High prevalence of abortion is the result of both wide availability of providers who can perform the procedure free of charge, and public tolerance of the practice. Another contributing factor is an insufficient supply of alternative methods of birth control, such as oral contraceptives. In 1974, the Ministry of Health of the former Soviet Union published *On the side effects and complications of oral contraceptives*, a document which practically banned the distribution and use of oral contraceptives. In addition, in 1987, the former Soviet Government introduced and legalized vacuum aspiration for mini-abortions. These two regulations enabled unlimited use of various methods of inducing abortions and restricted women's choices of other safe methods of birth control. Only intrauterine devices were widely available. Despite some indications that the number of induced abortions has declined in the last several years, the abortion issue remains a great public health concern due to the prevalence of complications and overall adverse effects on women's health.

Thus, while Kazakstan has indeed developed an advanced system of maternal and child health services, several health indicators have declined in the last several years as a result of deteriorating socioeconomic conditions, environmental problems, and cutbacks in health expenditures during the transition to a market economy. The challenge for the Government of Kazakstan is to develop appropriate long-term health strategies and to define priorities, particularly in the area of maternal and child health. Policy planning requires population-based data on reproductive health, fertility, infant mortality, and the nutritional status of women and children. Such data were collected in the Kazakstan Demographic and Health Survey.

1.4 Demographic and Health Data Collection System in Kazakstan

The demographic and health data collection system in Kazakstan 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 State Committee on Statistics ("Goskomstat") through the *raion* and *oblast* level statistical offices. Goskomstat is responsible for conducting censuses and maintaining this registration system. The last census in Kazakstan was conducted in 1989, and the data were made available in the 1990 publication of census results (Goskomstat, 1990). In addition, Goskomstat is responsible for tabulating and publishing an annual report of information on major economic and demographic categories generated by the registration system.

Collection of health data in Kazakstan is a primary responsibility of the Statistical Department of the Ministry of Health. The original health information is generated under the responsibility of staff at the local health care facility and then sent to the Statistical Department through the *raion* and *oblast* level health departments. The Statistical Department of the Ministry of Health compiles and analyzes these data and issues annual reports entitled *Health of the Population of the Republic of Kazakstan and Health Services.* The reports are distributed on the national and *oblast* levels for use by health administrators, health professionals, etc.

The health data collected and published by the Statistical Department of the Ministry of Health consists 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, vaccination coverage, 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.

1.5 Objectives and Organization of the Survey

The purpose of the 1995 Kazakstan Demographic and Health Survey (KDHS) was to provide an information base to the Ministry of Health for the planning of policies and programs regarding the health and nutrition of women and their children. The 1995 KDHS collected data on women's reproductive histories, knowledge and use of methods of contraception, breastfeeding practices, nutrition indicators, vaccination coverage, and episodes of diseases among children under age three. The survey also included measurement of hemoglobin levels 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 Kazakstan to collect, process, and analyze population and health data so as to facilitate the implementation of future surveys of this type.

The 1995 KDHS was the first national level population and health survey in Kazakstan. It was implemented by the National Institute of Nutrition, Republic of Kazakstan. The Kazakstan Academy of Preventive Medicine contributed significantly to the analysis of the KDHS results. The 1995 KDHS 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.

1.5.1 Sample Design and Implementation

The 1995 KDHS employed a nationally representative probability sample of women age 15-49. The country was divided into five survey regions (Figure 1.1). Four survey regions consisted of groups of contiguous *oblasts* (except the East Kazakstanskaya *oblast* which is not contiguous). Almaty City constituted a survey region by itself although it is part of the Almatinskaya oblast. The five survey regions were defined as follows:

1) Almaty City

2) South Region: Taldy-Korganskaya, Almatinskaya (except Almaty city), Dzhambylskaya, South Kazakstanskaya, and Kzyl-Ordinskaya

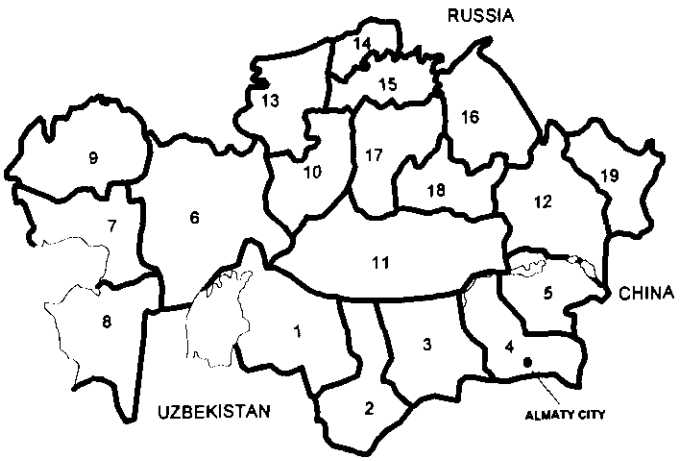
3) West Region: Aktiubinskaya, Mangistauskaya, Atyrauskaya, and West Kazakstanskaya

4) Central Region: Semipalatinskaya, Zhezkazganskaya, and Tourgaiskaya

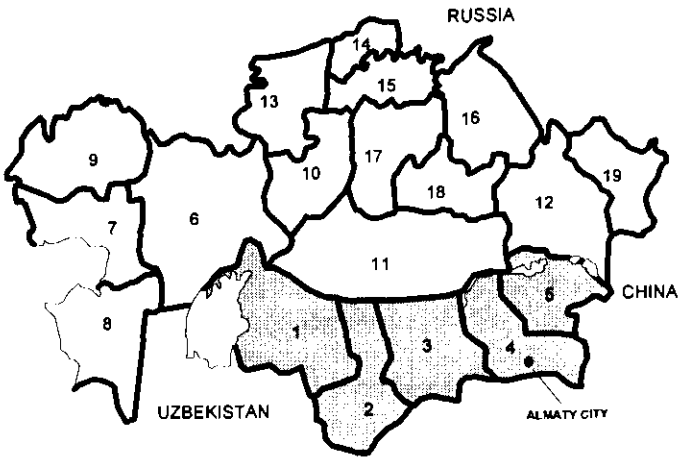
5) North and East Region: East Kazakstanskaya, Pavlodarskaya, Karagandinskaya, Akmolinskaya, Kokchetauskaya, North Kazakstanskaya, and Koustanaiskaya

It is important to note that the *oblast* composition of regions outside of Almaty City was determined on the basis of geographic proximity, *and* in order to achieve similarity with respect to reproductive practices within regions. The South and West Regions are comprised of *oblasts* which traditionally have a high proportion of Kazak population and high fertility levels. The Central Region contains three *oblasts* in which the fertility level is similar to the national average. The North and East Region contains seven *oblasts* situated in northern Kazakstan in which a relatively high proportion of the population is of Russian origin, and the fertility level is lower than the national average.

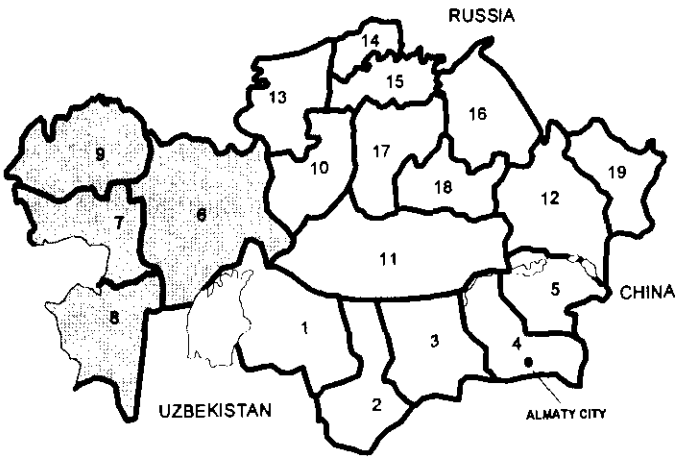
Figure 1.1
OBLAST COMPOSITION OF REGIONS IN KAZAKSTAN, 1995 KDHS



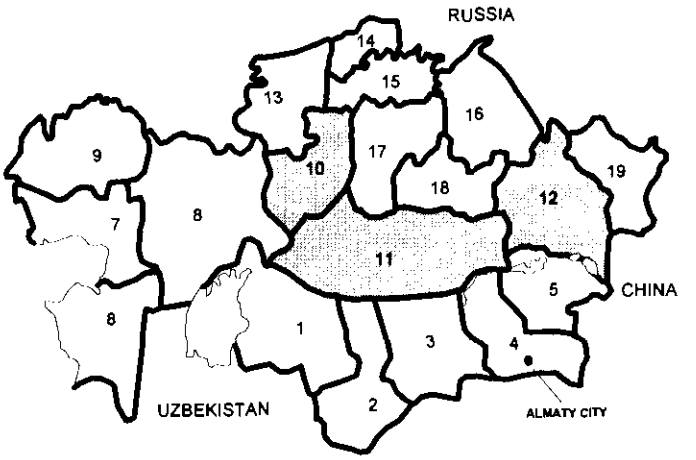
ALMATY CITY



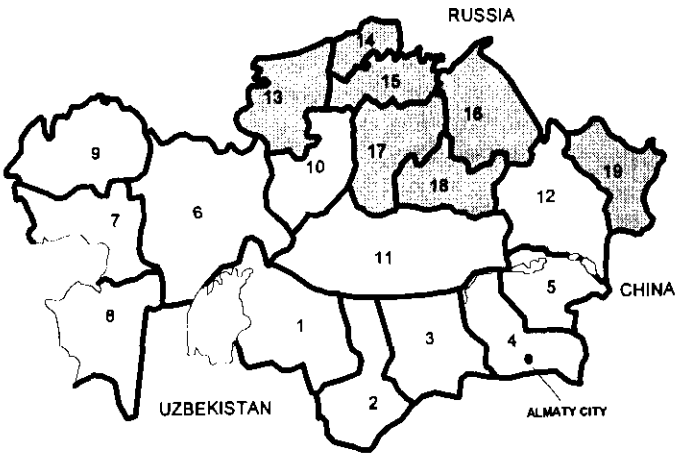
SOUTH



WEST



CENTRAL



NORTH and EAST

CITY OF ALMATY

SOUTH
1. Kzyl-Ordinskaya
2. South Kazakstanskaya
3. Zhambylskaya
4. Almatinskaya
5. Taldy-Korganskaya

WEST
6. Aktiubinskaya
7. Atyrauskaya
8. Mangistauskaya
9. West Kazakstanskaya

CENTRAL
10. Tourgaiskaya
11. Zhezkazganskaya
12. Semipalatinskaya

NORTH and EAST
13. Koustanaiskaya
14. North Kazakstanskaya
15. Kokchetauskaya
16. Pavlodarskaya
17. Akmolinskaya
18. Karagandinskaya
19. East Kazakstanskaya

In Almaty City, the sample for the 1995 KDHS was selected in two stages. In the first stage, 40 census counting blocks were selected with equal probability from the 1989 list of census counting blocks. A complete listing of the households in the selected counting blocks was carried out. The lists of households served as the frame for second-stage sampling; i.e., the selection of the households to be visited by the KDHS interviewing teams. In each selected household, women age 15-49 were eligible to be interviewed.

In the rural areas, the primary sampling units (PSUs) were the *raions* which were selected with probability proportional to size, the size being the 1993 population published by Goskomstat (1993). At the second stage, one village was selected in each selected *raion*, from the 1989 Registry of Villages. This resulted in 50 rural clusters being selected. At the third stage, households were selected in each cluster following the household listing operation as in Almaty City.

In the urban areas other than Almaty City, the PSUs were the cities and towns themselves. In the second stage, one health block was selected from each town except in self-representing cities (large cities that were selected with certainty) where more than one health block was selected. The selected health blocks were segmented prior to the household listing operation which provided the household lists for the third stage selection of households. In total, 86 health blocks were selected.

On average, 22 households were selected in each urban cluster, and 33 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 to the different survey regions, sampling weights have been applied to the data in this report.

Details concerning the KDHS sample design are provided in Appendix A and the estimation of sampling errors are included in Appendix B.

1.5.2 Questionnaires

Two questionnaires were used for the 1995 KDHS: the Household Questionnaire and the Individual Questionnaire. The questionnaires were based on the model survey instruments developed in the DHS program. They were adapted to the data needs of Kazakstan during consultations with specialists in the areas of reproductive health, child health and nutrition in Kazakstan.

The Household Questionnaire was used to enumerate all usual members and visitors in the sample households and to collect information relating to the socioeconomic position of a household. In the first part of the Household Questionnaire, information was collected on age, sex, educational attainment, marital status, 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 water, 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
- Anthropometry of children and mothers
- Hemoglobin measurement of women and children

One of the major efforts of the 1995 KDHS was testing women and children for iron-deficiency 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 finger-stick blood droplet from herself and her children. Results of anemia testing were kept confidential (as are all KDHS data); however, strictly with the consent of respondents, local health care facilities were informed of women and children who had severely low levels of hemoglobin (less than 7 g/dl).

1.5.3 Training and Fieldwork

The 1995 KDHS questionnaires were pretested in December 1994. Six female interviewers were trained over a two-week period at the Institute of Nutrition. The pretest included one week of interviewing in an urban area (Almaty City) and one week in a rural area. A total of 124 women were interviewed. Based on the pretest experience, the questionnaires were modified. Pretest interviewers were retained to serve as supervisors and field editors for the main survey.

Female nursing students of the National Medical College were recruited as interviewers and male students were recruited as medical technicians for the main survey. A total of 40 students were trained at the Medical College for four weeks from mid-April to mid-May 1995. 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 data collection was carried out by four 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 team members other than the medical technician were female. Fieldwork for the KDHS was conducted from May to September 1995.

1.5.4 Data Processing

Questionnaires were returned to the Institute of Nutrition in Almaty for data processing. The office editing staff checked that the questionnaires for all selected households and eligible respondents were returned from the field. The few questions which had not been precoded (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 in May 1995 (i.e., the same time that fieldwork started) and were completed in September 1995.

1.5.5 Response Rates

Table 1.1 presents information on the coverage of the 1995 KDHS sample including household and individual response rates. A total of 4,480 households were selected in the sample, of which 4,241 were occupied at the time of fieldwork. 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 members were away for an extended period at the time of interviewing. Of the 4,241 occupied households, 4,178 were interviewed, yielding a household response rate of 99 percent.

In the interviewed households, 3,899 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 3,771 of these women, yielding a response rate of 97 percent. The principal reason for nonresponse was the 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 95 percent.

Table 1.1 Results of the household and individual interviews

Number of households, number of interviews and response rates, Kazakstan 1995

Result	Residence		Total
	Urban	Rural	
Household interviews			
Households sampled	2,808	1,672	4,480
Households found	2,627	1,614	4,241
Households interviewed	2,570	1,608	4,178
Household response rate	97.8	99.6	98.5
Individual interviews			
Number of eligible women	2,131	1,768	3,899
Number of eligible women interviewed	2,056	1,715	3,771
Eligible woman response rate	96.5	97.0	96.7

CHAPTER 2

CHARACTERISTICS OF HOUSEHOLDS AND RESPONDENTS

Shamshiddin A. Balgimbekov and Raimbek Sissemaliev

Data about the background characteristics of the households and respondents are presented in this chapter. Since demographic and health parameters are largely determined 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, level of education of the household members); housing characteristics (presence of electricity, source of drinking water, sanitation, etc.) and background characteristics of survey respondents (residence, age, ethnicity, marital status, occupation, etc.).

2.1 Household Population

The KDHS Household Questionnaire was intended to elicit data on the sociodemographic characteristics of the members and visitors in each identified 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 the selected 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 15,635 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. Almost one-third of the population consists of children under 14 years of age (32 percent), with the proportion of children in rural areas higher than in urban areas (37 and 26 percent, respectively). Starting from age group 35-39, there is a gradual decrease in the proportion of subsequent age groups. In general, the number of women exceeds the number of men. This difference is more notable in urban areas. One-fourth of the de facto household population consists of women 15-49 years of age who are the main KDHS respondents.

As seen in Figure 2.1, the age-sex structure of the Kazakstan 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 55 years prior to the KDHS).

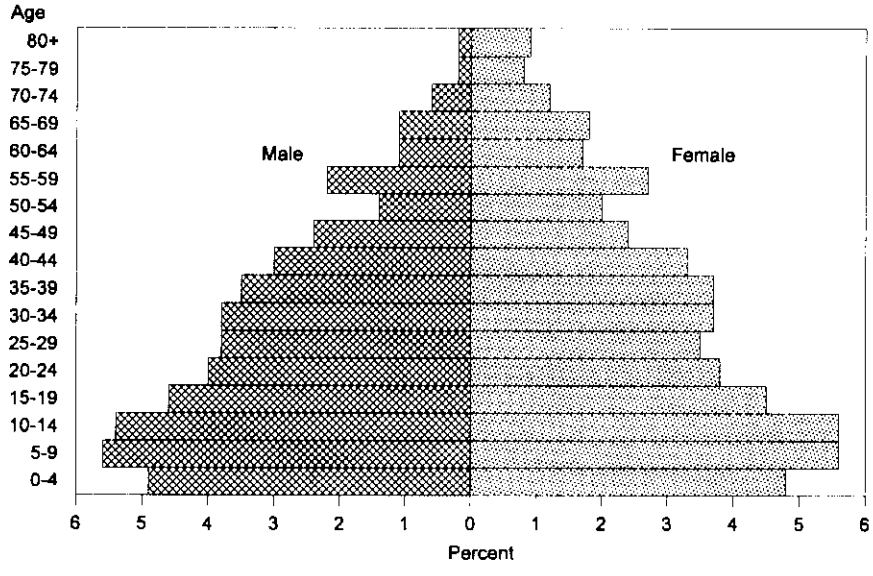
It is interesting to compare 1995 KDHS data with the 1989 Census (Table 2.2). Correspondence of the percent distribution of the population in broad age groups between the 1995 KDHS and the 1989 Census confirms the representativeness of the KDHS sample.

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, Kazakstan 1995

Age	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	7.8	6.7	7.2	12.3	11.5	11.9	10.3	9.2	9.7
5-9	9.4	9.0	9.2	13.4	12.2	12.8	11.6	10.7	11.1
10-14	10.4	9.6	10.0	11.8	11.7	11.8	11.2	10.7	10.9
15-19	9.3	8.4	8.9	9.8	8.9	9.4	9.6	8.7	9.1
20-24	7.8	6.1	6.9	9.0	8.4	8.7	8.4	7.3	7.9
25-29	7.2	7.1	7.1	8.5	6.3	7.4	7.9	6.7	7.3
30-34	8.6	6.7	7.6	7.5	7.5	7.5	8.0	7.1	7.5
35-39	8.2	8.2	8.2	6.6	6.2	6.4	7.3	7.2	7.2
40-44	8.6	8.1	8.3	4.4	4.7	4.6	6.3	6.3	6.3
45-49	5.6	5.4	5.5	4.6	3.8	4.2	5.0	4.5	4.8
50-54	3.7	4.4	4.1	2.5	3.4	2.9	3.0	3.9	3.5
55-59	5.2	6.0	5.6	4.2	4.6	4.4	4.6	5.3	4.9
60-64	2.9	3.4	3.2	2.0	3.1	2.5	2.4	3.2	2.8
65-69	3.3	4.3	3.8	1.4	2.8	2.1	2.3	3.5	2.9
70-74	1.2	2.8	2.1	1.3	2.0	1.7	1.3	2.4	1.9
75-79	0.5	1.7	1.2	0.5	1.3	0.9	0.5	1.5	1.0
80+	0.5	2.0	1.3	0.3	1.5	0.9	0.4	1.7	1.1
Missing/Don't know	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	3,358	3,864	7,222	4,137	4,277	8,413	7,495	8,141	15,635

Figure 2.1
Population Pyramid of Kazakstan



KDHS 1995

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 recognized by other members) and the relationship of each household member to the head was determined in each household. In general, heads of households mainly were males (68 percent), and in urban areas the proportion of households headed by men (61 percent) was less than in rural areas (77 percent).

About 70 percent of households consist of 1-4 members, with the average size of a household in Kazakstan being 3.8 members. There are significant differences in the household size between urban and rural areas, with the average urban household consisting of 3.1 members compared to 4.7 in rural households. Only 3 percent of households include a child under 15 neither of whose parents were household members.

Table 2.2 Population by age from selected sources

Percent distribution of the de jure population by age group, selected sources, Kazakstan 1989 and 1995

Age	1995 KDHS	1989 Census
<15	31.0	31.8
15-64	62.1	62.5
65+	6.9	5.7
Total	100.0	100.0
Median age	26.5	26.9
Dependency ratio	61.0	60.0

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, Kazakstan 1995

Characteristic	Residence		
	Urban	Rural	Total
Household headship			
Male	61.3	76.6	68.0
Female	38.7	23.4	32.0
Total	100.0	100.0	100.0
Number of members			
1	16.2	5.6	11.6
2	23.6	11.4	18.3
3	20.8	14.1	17.9
4	21.5	19.9	20.8
5	10.0	16.7	12.9
6	4.6	13.5	8.4
7	1.5	8.8	4.7
8	0.6	4.8	2.4
9+	0.9	5.2	2.8
Total	100.0	100.0	100.0
Mean size	3.1	4.7	3.8
Percent with foster children	2.2	4.4	3.1

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

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

Seventy-nine percent of children under age 15 live with both parents. As children get older, fewer of them live with both parents; 86 percent of children in age group 0-2 live with both parents, compared to 75 percent in the age group 12 years or more. Rural children are more likely than urban children to live with both parents. It is notable that a greater percent of children live with both parents in the Southern and Western Regions (83 percent in each region). Twelve percent of children under 15 are living with only their mother; of these, 3 percent have lost their fathers and 9 percent have fathers who are still alive. There are distinctions in this parameter depending on age of children, sex, and place of residence. It is notable that a significant number of children (6 percent) are not living with their parents though both parents are alive.

Regarding orphanhood, about 4 percent of children under 15 have fathers who have died and less than 1 percent have mothers who have died, while only a tiny fraction have lost both parents.

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, Kazakstan 1995

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	85.9	10.1	0.8	0.0	0.0	2.9	0.0	0.0	0.0	0.4	100.0	870
3-5	81.6	10.7	1.2	0.7	0.2	5.0	0.1	0.3	0.0	0.2	100.0	981
6-8	78.1	10.2	2.6	0.2	1.0	7.3	0.0	0.1	0.0	0.3	100.0	1,056
9-11	76.7	6.5	4.6	1.0	0.9	9.4	0.0	0.2	0.0	0.6	100.0	1,033
12+	74.6	7.4	6.1	1.6	1.4	6.9	0.3	0.3	0.3	1.0	100.0	1,034
Sex												
Male	80.2	7.9	3.6	1.0	1.1	5.5	0.1	0.1	0.1	0.4	100.0	2,478
Female	78.2	9.9	2.8	0.4	0.3	7.3	0.1	0.2	0.1	0.6	100.0	2,496
Residence												
Urban	75.7	12.3	2.8	0.8	0.5	6.6	0.2	0.2	0.0	0.8	100.0	1,907
Rural	81.3	6.8	3.4	0.6	0.8	6.3	0.1	0.2	0.1	0.4	100.0	3,067
Region												
Almaty City	68.6	18.7	6.0	1.0	0.0	3.7	0.6	0.6	0.0	0.8	100.0	188
South	82.7	5.6	3.1	0.7	0.9	6.5	0.1	0.0	0.1	0.4	100.0	2,286
West	82.7	7.5	3.4	0.4	1.5	3.9	0.1	0.3	0.0	0.4	100.0	718
Central	75.2	9.7	4.6	0.1	0.8	8.1	0.4	0.1	0.1	0.8	100.0	447
North and East	74.1	13.7	2.4	1.1	0.1	7.4	0.0	0.4	0.0	0.7	100.0	1,335
Total	79.2	8.9	3.2	0.7	0.7	6.4	0.1	0.2	0.1	0.5	100.0	4,974

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.

2.1.3 Educational Level of Household Members

One of the most important background characteristics is the level of education of the household members. The parameters of reproductive health of women and the health status of children in many respects depend on educational level.

According to the Constitution of the former Soviet Union, every person has a guarantee in getting secondary, secondary-special or higher education. In Kazakstan, most children begin to attend school at seven years of age (see chapter 1.1.4 on the educational system in Kazakstan).

The KDHS results confirm the high educational level of the Kazakstan population. As can be seen in Table 2.5, 95 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 20-49 age group. The educational level of urban women is higher than for rural women. There are educational differences between women in Almaty city and other regions. The median number of years of schooling is 10 for women.

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, Kazakstan 1995

Background characteristic	Level of education					Total	Number	Median years of schooling
	No education	Primary/ Secondary	Secondary-Special	Higher	Missing			
Age								
7-9	12.0	88.0	0.0	0.0	0.0	100.0	520	2.2
10-14	0.1	99.9	0.1	0.0	0.0	100.0	873	6.6
15-19	0.2	66.9	25.9	7.1	0.0	100.0	709	10.5
20-24	0.6	35.6	49.4	14.4	0.0	100.0	597	11.0
25-29	0.0	25.6	49.7	24.7	0.0	100.0	543	11.0
30-34	0.0	30.4	49.9	19.7	0.0	100.0	580	10.9
35-39	0.4	36.8	43.8	18.3	0.7	100.0	583	10.8
40-44	0.4	34.8	46.8	17.3	0.6	100.0	515	10.9
45-49	1.3	42.2	36.7	18.3	1.5	100.0	370	10.9
50-54	0.2	63.2	21.7	14.4	0.5	100.0	316	10.2
55-59	3.6	61.9	23.6	9.8	1.2	100.0	428	9.1
60-64	15.5	63.1	12.3	9.1	0.0	100.0	263	7.0
65+	23.0	62.7	10.5	3.5	0.3	100.0	741	4.8
Residence								
Urban	3.6	47.3	32.4	16.2	0.5	100.0	3,471	10.4
Rural	5.0	65.5	23.1	6.2	0.1	100.0	3,567	9.5
Region								
Almaty City	2.1	40.7	26.2	30.7	0.3	100.0	435	10.9
South	5.2	62.4	23.7	8.4	0.2	100.0	2,638	9.9
West	4.2	57.2	28.4	10.2	0.0	100.0	963	10.0
Central	3.2	52.9	31.8	12.0	0.1	100.0	628	10.1
North and East	4.0	53.6	31.0	10.8	0.6	100.0	2,374	10.1
Total	4.3	56.5	27.7	11.2	0.3	100.0	7,038	10.1

Data in Table 2.6 show that men in Kazakstan also have a high educational level. Thirty-eight percent of men have secondary-special and higher education, and in certain age groups, the proportion is about 60 percent. The proportion of men with higher education is greater in urban areas than rural (18 and 7 percent, respectively). The median duration of studying is higher in Almaty(10.8 years), than in the other four regions, where this parameter is almost identical (10.1-10.3 years).

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, Kazakstan 1995

Background characteristic	Level of education					Total	Number	Median years of schooling
	No education	Primary/ Secondary	Secondary-Special	Higher	Missing			
Age								
7-9	13.8	86.2	0.0	0.0	0.0	100.0	520	2.1
10-14	0.2	99.8	0.0	0.0	0.0	100.0	837	6.5
15-19	1.0	75.1	18.5	5.4	0.0	100.0	718	10.1
20-24	0.1	50.0	37.6	12.2	0.1	100.0	631	11.0
25-29	0.1	39.3	43.9	16.2	0.6	100.0	593	11.0
30-34	0.7	39.3	40.9	18.1	1.0	100.0	599	11.0
35-39	0.0	38.5	44.3	16.6	0.6	100.0	547	10.9
40-44	0.3	39.5	41.0	18.7	0.5	100.0	470	10.8
45-49	0.0	45.5	35.7	17.3	1.5	100.0	375	11.0
50-54	0.7	53.7	24.7	19.3	1.7	100.0	225	10.7
55-59	1.7	54.0	26.5	17.3	0.6	100.0	346	10.2
60-64	8.8	58.9	18.3	13.7	0.2	100.0	180	7.6
65+	8.3	58.6	17.9	14.4	0.8	100.0	330	7.5
Residence								
Urban	1.7	49.2	30.9	17.5	0.6	100.0	2,957	10.5
Rural	2.6	68.1	22.6	6.5	0.4	100.0	3,417	10.0
Region								
Almaty City	1.6	45.5	23.0	29.6	0.3	100.0	329	10.8
South	2.7	63.4	22.1	11.5	0.4	100.0	2,550	10.3
West	2.0	63.4	23.8	10.7	0.0	100.0	865	10.2
Central	1.6	56.9	29.4	11.6	0.5	100.0	546	10.1
North and East	1.8	55.5	32.6	9.3	0.8	100.0	2,084	10.1
Total	2.2	59.3	26.4	11.6	0.5	100.0	6,374	10.2

To predict a general educational 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, 85 percent of children age 7-17 were enrolled in school, with only slight differences by residence and sex.

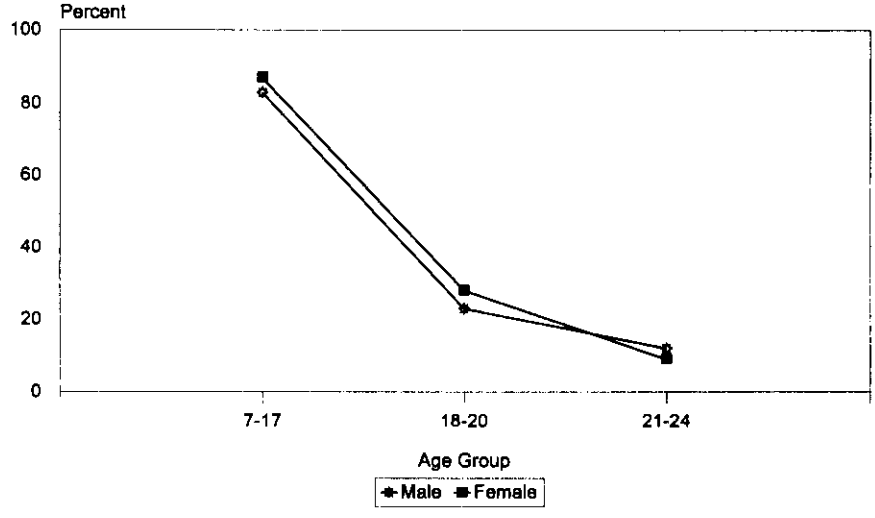
Not everyone continues studying in secondary-special and higher educational institutions after high school. Only one in four of those age 18-20 and only one in ten of those age 21-24 are enrolled in school. As age increases, the urban-rural gap widens such that the proportion enrolled in school is more than twice in urban than in rural areas. Although women generally have slightly higher enrollment rates than men, this advantage reverses among those age 21-24.

Table 2.7 School enrollment

Percentage of the de facto household population age 7-24 years enrolled in school, by age, sex, and residence, Kazakstan 1995

Age	Male			Female			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
7-17	86.4	81.4	83.4	87.2	87.1	87.1	86.8	84.2	85.2
18-20	35.5	13.3	23.4	36.7	19.9	28.1	36.1	16.5	25.8
21-24	17.2	8.5	12.1	16.0	4.1	8.8	16.6	6.3	10.4

Figure 2.2
School Enrollment by Age and Sex



KDHS 1995

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 source of drinking water, sanitation, quality of the floor and crowding, which are important determinants of the health status of household members, particularly of children.

As can be seen from Table 2.8 and Figure 2.3, all households in Kazakstan are supplied with electricity. That is the result of the successful policy of universal electrification that took place in the former Soviet Union.

The source of drinking water usually determines its quality. Eighty-five percent of households in Kazakstan have piped water, mostly piped into the residence. Most other households use well water. Almost all urban households use piped water (97 percent), almost all of which have the pipes inside. In rural areas, 70 percent of households have piped water, while more than one-fifth of the population uses water from wells. It is rare for people to use drinking water from tanker trucks, rivers, and other open water sources. Almost 90 percent of households in Kazakstan are within 15 minutes of the source of their water.

One indicator of sanitary conditions is the type of toilet in a household. In Kazakstan, a majority of households (57 percent) have pit toilets (latrines) and 42 percent have flush toilets. In urban areas, 73 percent of households have flush toilets, while in rural areas, 96 percent have traditional 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, 75 percent of households have a wooden floor and 22 percent of households use linoleum. In rural areas, floors are mainly made from wood (94 percent) and in cities, along with wood, people use linoleum (37 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. Both in cities and in villages, more than 90 percent of households have between one and two persons sleeping in a room. The average number of persons per room is a little bit higher in rural areas than in urban areas (1.6 and 1.3 percent, respectively).

Table 2.8 Housing characteristics

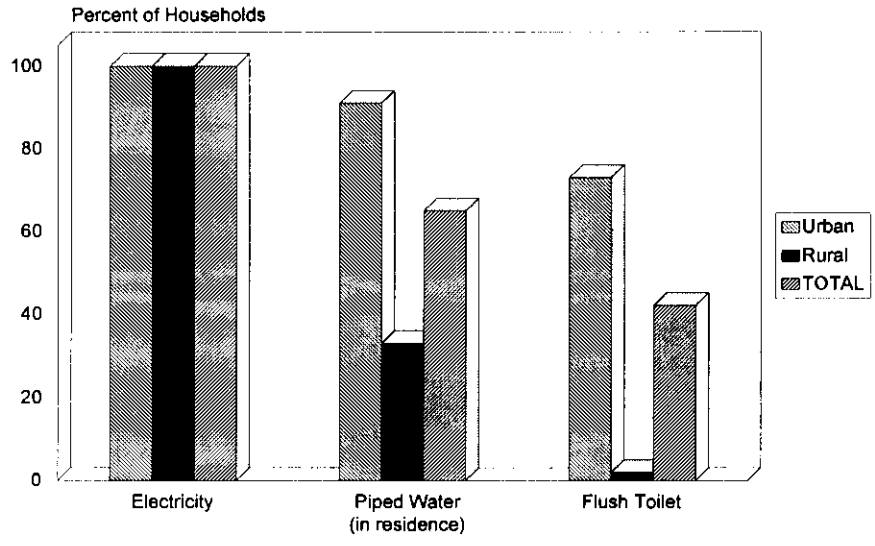
Percent distribution of households by housing characteristics, according to residence, Kazakstan 1995

Characteristic	Residence		
	Urban	Rural	Total
Electricity			
Yes	99.9	99.9	99.9
No	0.1	0.1	0.1
Total	100.0	100.0	100.0
Source of drinking water			
Piped into residence	90.5	32.5	65.4
Public tap	6.4	37.0	19.6
Well in residence	1.7	11.2	5.8
Public well	0.5	11.8	5.4
Spring	0.0	1.0	0.4
River/stream	0.1	3.2	1.4
Pond/lake	0.0	0.3	0.1
Tanker truck	0.8	2.9	1.7
Other	0.0	0.2	0.1
Total	100.0	100.0	100.0
Time to water source (in minutes)			
<15 minutes	96.7	75.9	87.7
Median time to source	0.5	4.1	0.7
Sanitation facility			
Own flush toilet	72.8	2.4	42.3
Shared flush toilet	0.3	0.0	0.2
Traditional pit toilet	26.6	95.9	56.6
Ventilated improved pit latrine	0.2	0.0	0.1
No facility/bush	0.1	1.7	0.8
Total	100.0	100.0	100.0
Floor material			
Wood planks	60.5	93.9	75.0
Linoleum	36.9	3.1	22.3
Parquet/polished wood	2.0	0.6	1.4
Earth/sand	0.0	1.9	0.8
Cement	0.0	0.3	0.1
Other	0.4	0.1	0.3
Total	100.0	100.0	100.0
Persons per sleeping room			
1-2	95.2	92.4	94.0
3-4	4.3	7.0	5.5
5-6	0.5	0.3	0.4
7 +	0.0	0.3	0.1
Total	100.0	100.0	100.0
Mean persons per sleeping room	1.3	1.6	1.4
Number of households	2,368	1,810	4,178

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). Presence of a radio and television set in a household is also an indicator of availability of information.

Figure 2.3
Housing Characteristics by Residence



KDHS 1995

Table 2.9 shows that urban households are more likely than rural households to have these durable goods, especially radios, telephones, television sets, and refrigerators. An approximately equal proportion of urban and rural households own 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, 90 percent of households in Kazakstan have television, 82 percent have refrigerators, but only half have radios and only 38 percent have telephones. Less than one in four households owns a car.

Table 2.9 Household durable goods

Percentage of households possessing various durable consumer goods, by residence, Kazakstan 1995

Durable goods	Residence		Total
	Urban	Rural	
Radio	62.0	36.9	51.1
Television	92.7	85.6	89.6
Telephone	48.9	22.6	37.5
Refrigerator	92.4	69.3	82.4
Bicycle	17.7	16.7	17.3
Motorcycle	7.0	15.9	10.9
Private car	24.0	21.3	22.9
None of the above	1.7	6.2	3.7
Number of households	2,368	1,810	4,178

2.3 Characteristics of Survey Respondents

2.3.1 Background Characteristics

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

To obtain the exact age of the women, the KDHS questionnaire included two questions: "In what month and year were you born?" and "How old are you?" To these questions special attention was given 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.

Table 2.10 Background characteristics of respondents

Percent distribution of women 15-49 by selected background characteristics, Kazakstan 1995

Background characteristic	Weighted percent	Number of women	
		Weighted	Un-weighted
Age			
15-19	17.7	669	660
20-24	15.0	567	586
25-29	13.8	521	530
30-34	14.8	557	558
35-39	14.9	564	562
40-44	14.3	537	505
45-49	9.4	355	370
Marital status			
Never married	23.5	885	912
Married	64.0	2,413	2,371
Living together	2.5	94	86
Widowed	2.9	108	115
Divorced	5.4	204	221
Not living together	1.8	67	66
Residence			
Urban	56.6	2,133	2,056
Rural	43.4	1,638	1,715
Region			
Almaty City	7.2	271	615
South	32.0	1,206	920
West	12.7	477	830
Central	9.5	358	726
North and East	38.7	1,458	680
Education			
Primary/secondary	36.6	1,380	1,397
Secondary-special	45.6	1,721	1,630
Higher	17.8	670	744
Respondent still in school			
Yes	11.9	449	455
No	88.1	3,322	3,316
Religion			
Muslim	50.8	1,914	2,106
Christian	32.8	1,238	1,110
Other	1.3	51	41
Not religious	13.2	499	455
Don't know	1.8	69	59
Ethnicity			
Kazak	45.0	1,696	1,937
Russian	34.7	1,309	1,178
Ukrainian	3.8	141	120
German	3.8	142	116
Byelorussian	0.9	35	28
Tatar	1.6	61	68
Uzbek	1.1	42	28
Other	9.1	344	296
Total	100.0	3,771	3,771

As shown in Table 2.10, female respondents are rather equally distributed by age groups, except for a smaller proportion at age 45-49. The majority of the women are married or living with a man (67 percent), but there is also a significant proportion of never-married women (24 percent), and widowed, divorced, or separated women (10 percent). More than half of women 15-49 live in urban areas (57 percent). More than 70 percent of the respondents live in the South and the North and East Regions. All women 15-49 have at least some education and 63 percent have secondary-special or higher education. Twelve percent are still in school.

More than half of the female respondents are Muslim, while one-third are Christian. There are a significant number of women (13 percent) who are not religious. The ethnic structure of the respondents basically represents two large ethnic groups: Kazaks (45 percent) and Russians (35 percent).

Table 2.11 shows the distribution of women 15-49 by ethnicity, religion, and residence according to region. It shows that the South, West and Central Regions have a higher than average concentration of Kazaks, while Russians make up a majority of the respondents in Almaty city and the North and East Region. Similarly, Muslims tend to be concentrated in the South, West and Central Regions, while Christians are concentrated in Almaty City and the North and East Region.

Table 2.11 Ethnicity, religion and residence by region

Percent distribution of women 15-49 by ethnicity, religion and residence, according to region, Kazakstan 1995

Background characteristic	Region					Total
	Almaty City	South	West	Central	North and East	
Ethnicity						
Kazak	25.7	67.5	69.0	53.5	20.0	45.0
Russian	55.6	12.2	21.0	30.9	54.9	34.7
Ukrainian	3.9	0.3	2.9	2.9	7.1	3.8
German	1.6	0.6	1.3	5.2	7.2	3.8
Byelorussian	0.3	0.1	0.7	1.0	1.8	0.9
Tatar	2.3	0.8	1.4	3.8	1.7	1.6
Uzbek	0.5	3.1	0.0	0.0	0.3	1.1
Other	10.1	15.4	3.7	2.7	7.1	9.1
Religion						
Muslim	30.7	83.0	69.6	51.7	21.4	50.8
Christian	49.1	12.1	24.0	26.0	51.5	32.8
Other	1.5	0.9	0.2	1.3	2.1	1.3
Not religious	16.9	3.7	5.6	18.7	21.6	13.2
Don't know	1.8	0.4	0.6	2.3	3.3	1.8
Residence						
Urban	100.0	41.6	55.7	55.9	61.3	56.6
Rural	0.0	58.4	44.3	44.1	38.7	43.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number	271	1,206	477	358	1,458	3,771

2.3.2 Educational Level of the 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 reproductive health of the women in many respects are related to differences in the level of education.

Thirty-seven percent of respondents have attended primary/secondary schools, 46 percent have attended secondary-special schools, and 18 percent have reached higher education schools. Women age 25-44 tend to have more education than younger or older women. There are significant differences in education between urban and rural areas and between regions. The proportion of respondents with higher education in

Table 2.12 Level of education

Percent distribution of women by the highest level of education attended, according to selected background characteristics, Kazakstan 1995

Background characteristic	Highest level of education			Total	Number of women
	Primary/ Secondary	Secondary-special	Higher		
Age					
15-19	63.5	28.6	7.9	100.0	669
20-24	35.5	49.5	15.0	100.0	567
25-29	22.3	50.9	26.7	100.0	521
30-34	27.2	52.0	20.8	100.0	557
35-39	32.2	48.4	19.3	100.0	564
40-44	30.5	50.6	18.9	100.0	537
45-49	39.5	41.7	18.7	100.0	355
Residence					
Urban	27.9	48.3	23.8	100.0	2,133
Rural	48.0	42.1	9.9	100.0	1,638
Region					
Almaty City	25.9	33.3	40.8	100.0	271
South	45.7	40.1	14.2	100.0	1,206
West	41.5	42.4	16.1	100.0	477
Central	31.2	50.0	18.7	100.0	358
North and East	30.8	52.5	16.7	100.0	1,458
Ethnicity					
Kazak	39.1	40.2	20.6	100.0	1,696
Russian	27.4	54.4	18.2	100.0	1,309
Other	46.8	42.5	10.7	100.0	766
Total	36.6	45.6	17.8	100.0	3,771

urban areas is twice that in rural areas, and almost three times more in Almaty city than in the other regions. Russian women are more educated on average than Kazak women, with the latter more likely to have only primary/secondary education; on the other hand, Kazak women are slightly more likely than Russian women to have reached higher education.

2.3.3 School Attendance and Reasons for Leaving School

Because of the apparent effect of women's education on so many demographic and health indicators, it is interesting to analyze the reasons why women leave school. As shown in Table 2.13, 35 percent of women age 15-24 currently attend school. The main reasons for leaving school are marriage and the sufficiency of obtained education. Ten percent of the women declare that they left school in order to earn money. Women who leave school early in their education are more likely to leave to get married or to earn money or because they did not like school, compared to those who leave at a higher level of education.

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, Kazakstan 1995

Reason for leaving school	Educational attainment			Total
	Incomplete secondary	Complete secondary	Higher	
TOTAL				
Currently attending	44.1	23.9	72.0	35.1
Got pregnant	0.7	1.0	1.1	0.9
Got married	10.2	17.6	0.8	13.6
Take care of younger children	1.2	0.8	0.3	0.9
Family need help	5.4	7.2	1.4	6.0
Need to earn money	9.2	11.1	2.2	9.5
Graduated/Enough school	6.2	16.8	20.2	14.1
Did not pass exams	2.5	7.0	0.0	4.9
Did not like school	12.4	6.0	1.9	7.4
School not accessible	3.3	0.7	0.0	1.4
Applying for school	1.1	6.2	0.0	4.0
Other	3.6	1.4	0.0	1.9
Don't know/missing	0.0	0.4	0.0	0.3
Total	100.0	100.0	100.0	100.0
Number	358	739	138	1,235
URBAN				
Currently attending	54.1	27.8	75.6	42.3
Got pregnant	0.0	1.4	0.4	0.9
Got married	8.1	13.5	0.0	9.9
Take care of younger children	1.5	1.7	0.0	1.4
Family need help	4.9	3.0	0.0	3.0
Need to earn money	6.3	11.4	1.9	8.5
Graduated/Enough school	7.0	18.3	19.6	15.7
Did not pass exams	2.5	7.0	0.0	4.7
Did not like school	9.8	6.1	2.5	6.4
School not accessible	0.8	0.6	0.0	0.6
Applying for school	2.3	7.0	0.0	4.7
Other	2.6	1.6	0.0	1.5
Don't know/missing	0.0	0.6	0.0	0.4
Total	100.0	100.0	100.0	100.0
Number	154	363	103	620
RURAL				
Currently attending	36.5	20.1	61.2	27.9
Got pregnant	1.2	0.6	3.3	0.9
Got married	11.7	21.6	3.3	17.3
Take care of younger children	1.0	0.0	1.3	0.4
Family need help	5.8	11.2	5.6	9.1
Need to earn money	11.4	10.7	3.3	10.5
Graduated/Enough school	5.6	15.3	22.2	12.5
Did not pass exams	2.5	7.1	0.0	5.2
Did not like school	14.4	5.9	0.0	8.4
School not accessible	5.3	0.8	0.0	2.2
Applying for school	0.2	5.4	0.0	3.4
Other	4.4	1.2	0.0	2.2
Don't know/missing	0.0	0.2	0.0	0.1
Total	100.0	100.0	100.0	100.0
Number	204	376	35	615

2.3.4 Access to Mass Media

During the KDHS interviews, women were questioned about the availability of mass media, which are important potential sources of disseminating awareness of certain issues, including family planning. These data facilitate the development of recommendations for drawing up programs on radio and TV, publications in the newspapers, and magazines on reproductive health, family planning, and other topics.

Table 2.14 shows that 94 percent of women watch TV weekly, while 78 percent read a newspaper at least once a week. Daily radio listening is less widespread at only 40 percent. While there is little difference by age in newspaper reading and TV watching, older women listen to the radio more than younger women. Women in Almaty City have more access to all three types of mass media (63 percent) than women in the South Region (24 percent). It is notable that there is a connection between the availability of mass media and respondents' educational level; the higher the educational level, the more often women watch TV, read newspapers, and listen to the radio. Russian women are more likely than Kazak women to avail themselves of all three of these media.

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, Kazakstan 1995

Background characteristic	No mass media	Mass media: Read newspaper weekly	Mass media: Watch television weekly	Mass media: Listen to radio daily	Mass media: All three media	Number of women
Age						
15-19	1.1	76.8	94.7	29.7	23.5	669
20-24	1.5	79.2	93.1	32.5	25.8	567
25-29	4.0	79.5	92.8	38.5	34.4	521
30-34	2.0	77.8	94.9	41.6	33.1	557
35-39	1.8	79.9	93.3	43.7	36.6	564
40-44	2.1	77.1	93.7	46.9	38.4	537
45-49	3.9	75.0	91.1	54.0	44.4	355
Residence						
Urban	0.8	82.6	96.3	48.3	41.6	2,133
Rural	4.0	72.0	89.9	29.0	21.3	1,638
Region						
Almaty City	0.5	94.1	98.2	66.7	63.4	271
South	3.9	65.8	91.7	32.3	24.0	1,206
West	2.6	84.6	90.0	38.7	32.3	477
Central	1.6	81.4	94.0	39.8	33.5	358
North and East	1.1	82.1	95.2	41.7	34.4	1,458
Education						
Primary/Secondary	3.8	69.2	90.6	32.7	23.7	1,380
Secondary-special	1.4	79.9	94.9	39.9	33.4	1,721
Higher	0.9	91.3	96.1	54.8	49.9	670
Ethnicity						
Kazak	3.1	75.6	91.0	35.8	28.3	1,696
Russian	1.4	83.6	95.4	46.5	40.0	1,309
Other	1.7	73.9	95.9	37.8	30.4	766
Total	2.2	78.0	93.5	39.9	32.8	3,771

2.3.5 Women's Employment Status

The reproductive health of women depends to some extent on their economic status, especially their employment. The economic crisis in Kazakstan is characterized by a recession in manufacturing, the closing of a majority of enterprises, and an increase in the number of unemployed people, especially women. Table 2.15 presents information on women's employment status according to age, residence, region, educational level, and ethnicity.

Overall, 47 percent of women are not currently employed and 40 percent have not been employed for the last 12 months. Unemployment is more common among younger women, those living in rural areas, those in the South, West and Central Regions, those with lower educational level, and Kazak women. Almost one-fifth of the employed women work for less than five days a week and 5 percent of the women are employed only seasonally or occasionally.

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, Kazakstan 1995

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
			5+ days per week	<5 days per week				
Age								
15-19	75.6	6.9	8.4	2.6	4.7	1.7	100.0	669
20-24	53.2	6.1	30.6	4.2	3.7	2.1	100.0	567
25-29	46.7	5.5	37.5	5.9	3.5	0.9	100.0	521
30-34	33.1	6.2	43.3	11.9	4.1	1.4	100.0	557
35-39	25.8	4.1	55.5	9.1	4.3	1.2	100.0	564
40-44	15.0	6.8	60.6	11.2	4.9	1.4	100.0	537
45-49	16.7	8.5	60.5	12.3	1.7	0.3	100.0	355
Residence								
Urban	34.5	6.1	45.5	10.5	1.7	1.8	100.0	2,133
Rural	47.9	6.4	33.6	4.3	7.0	0.8	100.0	1,638
Region								
Almaty City	30.1	8.0	46.7	8.9	3.9	2.4	100.0	271
South	51.0	5.2	31.6	5.7	6.2	0.2	100.0	1,206
West	40.5	6.0	44.7	6.3	1.7	0.8	100.0	477
Central	40.9	6.5	40.7	8.2	2.7	1.0	100.0	358
North and East	33.2	6.7	44.8	9.7	3.2	2.4	100.0	1,458
Education								
Primary/Secondary	52.0	5.7	27.6	6.4	7.0	1.3	100.0	1,380
Secondary-special	35.0	7.1	43.9	9.8	2.8	1.4	100.0	1,721
Higher	29.9	5.2	57.3	5.5	0.8	1.3	100.0	670
Ethnicity								
Kazak	47.1	5.4	37.3	5.3	4.0	0.8	100.0	1,696
Russian	32.7	6.9	45.2	11.2	2.2	1.8	100.0	1,309
Other	38.4	6.8	38.5	7.4	7.0	1.9	100.0	766
Total	40.3	6.2	40.3	7.8	4.0	1.4	100.0	3,771

2.3.6 Employer

Table 2.16 shows the percent distribution of currently employed women by type of employer, according to background characteristics. Eighty-three percent of employed women work in state enterprises. Eleven percent of women work for themselves or in enterprises owned by their relatives. This type of employment is highest for younger women, women who live in urban areas, and those who live in Almaty City. Women in Almaty City are also more likely to work in a private firm. Kazak women are more likely to work in a government enterprise, while Russian women are slightly more likely than Kazak women to work for a private firm.

Table 2.16 Employer

Percent distribution of currently employed women by employer, according to background characteristics, Kazakstan 1995

Background characteristic	Employer				Total	Number
	Government or State enterprise	Family, own business	Private firm, person	Self-employed		
Age						
15-19	69.6	7.7	4.6	18.0	100.0	117
20-24	75.3	3.2	8.0	13.5	100.0	231
25-29	82.0	2.5	6.8	8.7	100.0	250
30-34	81.2	4.0	6.0	8.9	100.0	338
35-39	80.0	3.1	8.1	8.9	100.0	395
40-44	90.4	1.0	5.3	3.3	100.0	420
45-49	88.2	2.5	6.4	2.9	100.0	265
Residence						
Urban	77.1	2.9	10.0	10.0	100.0	1,268
Rural	91.7	3.0	0.7	4.5	100.0	748
Region						
Almaty City	64.8	3.7	20.2	11.3	100.0	168
South	84.6	5.5	2.7	7.3	100.0	528
West	89.6	1.5	3.4	5.5	100.0	255
Central	88.1	1.2	5.1	5.7	100.0	188
North and East	81.5	2.0	7.5	8.9	100.0	877
Education						
Primary/Secondary	82.1	4.0	3.6	10.4	100.0	585
Secondary-special	82.3	2.6	7.5	7.7	100.0	996
Higher	83.8	2.3	8.4	5.4	100.0	435
Ethnicity						
Kazak	87.7	2.6	3.3	6.3	100.0	805
Russian	79.2	2.7	10.0	8.1	100.0	791
Other	78.9	3.9	6.4	10.8	100.0	420
Total	82.5	2.9	6.6	8.0	100.0	2,016

Note: Private firm/person includes 9 women who do not earn cash.

2.3.7 Occupation

Kazakstan is mainly an agrarian country. However, only 10 percent of employed women work in agriculture (Table 2.17) and the majority of them work on state land. Women in the South Region are more likely to be working in agriculture, either on state land, or on their own or rented land. A higher proportion of less educated women work in agriculture, compared to better educated women.

Ninety percent of employed women are not engaged in agriculture. Almost half work in professional, technical, and managerial occupations; 20 percent in sales and trade; and 21 percent in manual labor. These parameters differ by age, residence, region, and respondent's ethnicity. Significant differences are also seen by educational level—women with higher education are engaged mainly in professional and technical fields, with few employed in manual labor.

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, Kazakstan 1995

	Agricultural				Nonagricultural						
Background characteristic	Own land	Family land	Rented land	State land	Prof./ tech./ manag.	Sales/ services	Skilled manual	Unskilled manual	Other/ Missing	Total	Number
Age											
15-19	0.0	1.0	3.3	11.6	25.8	34.6	10.7	12.6	0.4	100.0	117
20-24	0.0	0.0	2.0	5.5	47.1	22.7	9.6	12.8	0.2	100.0	231
25-29	0.0	0.0	3.2	5.0	55.0	20.3	8.1	8.4	0.0	100.0	250
30-34	1.1	0.0	0.8	7.5	52.2	20.3	9.2	8.8	0.0	100.0	338
35-39	0.4	0.1	1.4	8.9	45.0	19.1	11.3	13.7	0.0	100.0	395
40-44	0.0	0.0	0.4	11.1	49.9	18.5	9.8	10.3	0.0	100.0	420
45-49	0.2	0.0	0.4	6.7	52.6	14.9	11.4	13.9	0.0	100.0	265
Residence											
Urban	0.2	0.0	0.2	0.3	53.0	23.5	13.1	9.6	0.0	100.0	1,268
Rural	0.5	0.2	3.4	21.3	41.1	14.3	4.8	14.5	0.0	100.0	748
Region											
Almaty City	0.3	0.3	0.3	0.3	51.4	28.6	10.5	8.1	0.3	100.0	168
South	1.0	0.2	5.0	12.1	49.3	15.4	6.7	10.4	0.0	100.0	528
West	0.2	0.0	0.2	4.9	50.8	15.7	12.2	16.0	0.0	100.0	255
Central	0.0	0.0	0.0	3.5	53.8	16.3	12.1	14.0	0.3	100.0	188
North and East	0.0	0.0	0.0	9.2	45.9	23.3	10.9	10.7	0.0	100.0	877
Education											
Primary/Secondary	1.0	0.2	3.2	16.4	20.2	22.6	12.5	23.9	0.0	100.0	585
Secondary-special	0.0	0.0	0.9	6.6	50.3	22.2	11.4	8.5	0.1	100.0	996
Higher	0.0	0.0	0.0	0.5	82.9	11.9	3.5	1.1	0.1	100.0	435
Ethnicity											
Kazak	0.1	0.1	1.5	9.6	55.8	14.3	7.0	11.5	0.2	100.0	805
Russian	0.0	0.0	0.2	3.8	49.5	21.6	13.5	11.4	0.0	100.0	791
Other	1.3	0.1	3.4	13.4	33.1	28.5	9.3	11.0	0.0	100.0	420
Total	0.3	0.1	1.4	8.1	48.6	20.1	10.0	11.4	0.0	100.0	2,016

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

2.3.8 Decisions on Use of Earnings

When the socioeconomic status of women is being assessed, their independence in making decisions on the use of their earnings is a valuable indicator. Table 2.18 shows that almost 45 percent of employed women make their own decisions on the use of their earnings, while 42 percent decide together with their husband or partner, and 9 percent make decisions jointly with someone other than a husband. Only 2 percent of women report that their husbands alone decide how to spend their wives' earnings. Independent decision making on use of earnings tends to be higher among women in urban areas, especially Almaty City, and among women who are not married.

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, Kazakstan 1995

Background characteristic	Person who decides how earnings are used					Total	Number
	Self only	Husband/ partner	Jointly with husband/ partner	Someone else	Jointly with someone		
Age							
15-19	36.7	0.0	13.5	15.0	34.8	100.0	115
20-24	46.3	0.9	23.1	5.5	24.2	100.0	230
25-29	36.9	3.5	44.0	1.7	13.8	100.0	250
30-34	45.3	2.7	44.8	1.5	5.7	100.0	336
35-39	46.9	1.7	47.6	0.2	3.6	100.0	393
40-44	44.3	1.8	50.3	0.1	3.5	100.0	420
45-49	50.2	1.6	43.6	0.4	4.1	100.0	264
Residence							
Urban	48.3	2.1	40.4	1.0	8.2	100.0	1,263
Rural	38.4	1.6	44.6	3.8	11.6	100.0	744
Region							
Almaty City	50.4	2.9	35.7	2.4	8.7	100.0	168
South	37.6	2.2	47.6	4.4	8.3	100.0	525
West	45.6	2.0	38.0	2.7	11.7	100.0	251
Central	50.1	1.1	40.6	0.5	7.7	100.0	186
North and East	46.3	1.7	41.2	0.7	10.0	100.0	877
Education							
Primary/Secondary	42.0	1.8	39.1	3.6	13.5	100.0	580
Secondary-special	48.3	2.1	42.3	1.3	6.0	100.0	992
Higher	39.8	1.8	44.8	1.7	11.9	100.0	435
Ethnicity							
Kazak	43.2	2.1	42.5	2.6	9.7	100.0	799
Russian	45.5	1.5	44.5	1.0	7.4	100.0	789
Other	45.7	2.4	36.1	3.0	12.8	100.0	420
Marital status							
Not married	67.2	0.0	0.3	4.8	27.8	100.0	592
Currently married	35.2	2.7	59.4	0.9	1.7	100.0	1,414
Total	44.6	1.9	41.9	2.1	9.4	100.0	2,007

2.3.9 Child Care While Working

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

As Table 2.19 shows, less than one-fourth 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 (32 percent), the South Region (30 percent) and among Kazaks (31 percent). Among employed women with young children, only 7 percent care for the children themselves, 7 percent are cared for by the husband or partner, and 28 percent are cared for by relatives.

One-third of employed women with young children use preschool child care institutions despite the mass shutdown during recent years. Use of institutional child care is greatest in urban areas (47 percent), the North and East Region (43 percent), and among Russian women (48 percent).

When other children are used as child care providers, the caretaker is much more likely to be a sister (10 percent) than a brother (4 percent). The role of other people (neighbors, servants) in providing child care is insignificant.

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, Kazakstan 1995

Background characteristic	Employed women with:		Child's caretaker while mother is at work													
	No child under six at home	One or more children under six at home	Respondent	Husband/ partner	Other relative	Neighbor	Servants/ Hired help	Institutional care	Other female child	Other male child	Child lives elsewhere	Not worked since birth[1]	Other	Total	Number of employed women
Residence															
Urban	80.8	19.2	4.7	8.2	22.7	1.9	1.1	46.8	4.6	2.7	1.2	5.9	0.2	100.0	1,268
Rural	68.3	31.7	10.2	5.8	32.4	0.2	0.0	18.6	16.3	4.6	0.7	8.7	2.6	100.0	748
Education															
No education	75.4	24.6	13.6	6.9	25.0	1.6	0.0	24.5	15.4	5.9	0.0	5.8	1.3	100.0	585
Primary	76.9	23.1	5.1	5.4	28.7	1.2	1.0	35.1	9.4	2.7	1.6	8.8	1.1	100.0	996
Secondary+	75.6	24.4	4.0	10.8	28.3	0.0	0.4	39.3	5.7	2.5	0.8	6.0	2.3	100.0	435
Work status															
For family member	74.5	25.5	0.0	13.0	36.8	0.0	0.0	14.3	22.5	7.5	5.9	0.0	0.0	100.0	59
For someone else	87.9	12.1	0.0	13.4	21.4	0.0	2.8	56.2	0.0	3.5	2.8	0.0	0.0	100.0	132
Self-employed	66.7	33.3	21.2	10.1	32.6	0.0	0.0	26.4	2.5	0.8	0.0	6.4	0.0	100.0	160
Region															
Almaty City	84.3	15.7	0.0	6.7	41.7	0.0	1.7	36.7	1.7	3.3	8.3	0.0	0.0	100.0	168
South	69.7	30.3	10.2	5.3	29.6	0.0	0.0	18.8	13.1	3.9	0.7	18.4	0.0	100.0	528
West	72.7	27.3	4.2	5.5	28.7	0.0	0.0	37.6	10.4	3.7	1.7	3.3	4.9	100.0	255
Central	75.4	24.6	8.3	10.7	28.7	0.9	0.0	31.7	11.3	3.3	0.0	2.1	3.1	100.0	188
North and East	79.7	20.3	7.0	8.2	22.7	2.6	1.3	43.4	9.0	3.5	0.0	1.3	1.1	100.0	877
Ethnicity															
Kazak	69.2	30.8	4.9	7.7	28.7	0.2	1.1	26.1	11.2	4.1	1.5	12.0	2.5	100.0	805
Russian	81.0	19.0	6.2	6.9	21.5	3.0	0.0	48.0	7.9	3.1	0.3	2.7	0.4	100.0	791
Other	80.4	19.6	17.1	5.3	34.8	0.0	0.0	25.4	12.3	3.2	0.5	1.4	0.0	100.0	420
Occupation															
Agricultural	65.5	34.5	13.7	7.0	31.6	0.0	0.0	5.3	25.7	4.5	1.6	9.9	0.6	100.0	199
Nonagricultural	77.3	22.7	6.3	7.0	26.8	1.2	0.7	37.5	7.8	3.5	0.8	6.8	1.5	100.0	1,817
Employment status															
All year, full week	77.0	23.0	4.9	6.4	27.9	1.4	0.1	36.0	10.2	3.0	0.9	7.6	1.5	100.0	1,520
All year, part week	77.1	22.9	6.8	13.3	21.4	0.0	3.4	31.4	10.7	6.6	0.7	5.1	0.7	100.0	294
Seasonal	67.7	32.3	12.6	4.1	34.8	0.0	0.0	17.1	12.5	5.0	1.8	10.3	1.8	100.0	150
Occasional	72.4	27.6	53.6	3.1	22.4	0.0	0.0	16.1	4.8	0.0	0.0	0.0	0.0	100.0	521
Total	76.2	23.8	7.4	7.0	27.5	1.0	0.6	32.9	10.4	3.6	0.9	7.3	1.4	100.0	2,016

Note: Totals include 1 woman with occupation missing. 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.

CHAPTER 3

FERTILITY

Vassily N. Devyatko and Kia I. Weinstein

A complete pregnancy history was collected from each woman interviewed in the 1995 KDHS. To encourage complete reporting of all pregnancies, respondents were asked separate questions about pregnancies that resulted in live births, induced abortions (including mini-abortions), miscarriages, and stillbirths. 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 all pregnancies, all pregnancy intervals of four or more years in duration were additionally 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 was recorded for each pregnancy. For each live birth, sex of child, survival status, and age (for living children) or age at death (for dead children) were also collected.

This chapter presents the findings pertaining to live births. Because ethnicity is a major determinant of fertility in Kazakstan, fertility data are shown separately for ethnic Kazaks and ethnic Russians, in addition to overall rates for all of Kazakstan. 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 (mid-1992 to mid-1995).[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 (CBR) 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.

Fertility among urban women is lower than among rural women throughout all the childbearing years, resulting in a TFR among urban women that is one child lower than among rural women. If fertility were to remain constant at current levels, a Kazakstan woman would give birth to an average of 2.5 children; urban women would have 2.0 children, while rural women would have 3.1 children. The peak childbearing years for both urban and rural women are during the early twenties (age 20-24).

[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.

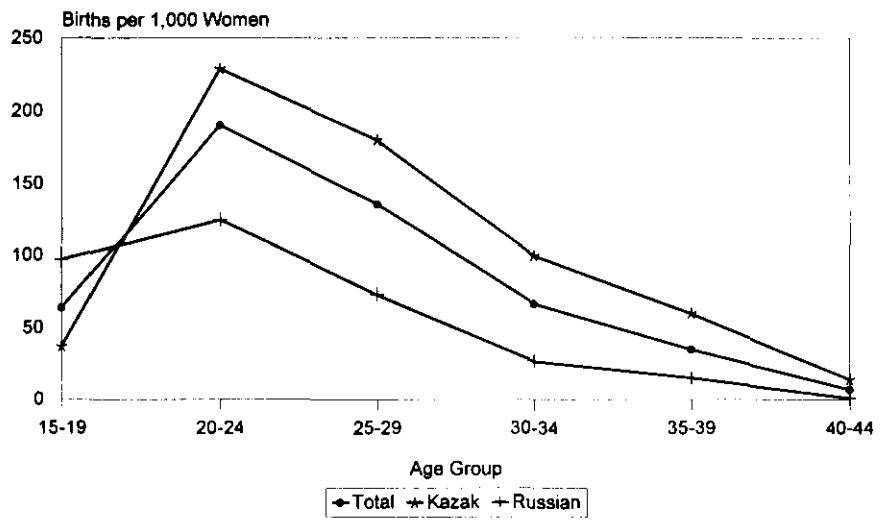
Table 3.1 Current fertility

Age-specific and cumulative fertility rates and the crude birth rate for the three years preceding the survey, by residence and ethnicity, Kazakstan 1995

	Residence		Ethnicity			
Age	Urban	Rural	Kazak	Russian	Other	Total
15-19	51	78	37	97	79	64
20-24	145	235	229	125	174	190
25-29	132	140	180	73	131	136
30-34	46	92	100	27	55	67
35-39	22	56	60	15	26	35
40-44	4	11	14	1	5	7
45-49	0	0	0	0	(0)	0
TFR 15-49	2.00	3.06	3.11	1.69	(2.35)	2.49
TFR 15-44	2.00	3.06	3.11	1.69	2.35	2.49
GFR	62	109	109	52	76	83
CBR	15	24	-	-	-	19

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 one or more of the component age-specific rates is 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



KDHS 1995

Ethnic Kazaks and ethnic Russians both experience their peak childbearing years during their early twenties. However, ethnic Kazaks achieve a TFR that is higher (3.1 children per woman) than the overall TFR, and ethnic Russians a TFR that is lower (1.7 children per woman). No respondents age 45-49 report having a live birth in the previous three years.

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 two children. The TFR is lowest among women in Almaty city (1.5 children per woman) and the North and East Region (1.8), intermediate in the West and Central Regions (both 2.7) and highest in the South Region (3.4).

Women in Kazakstan exhibit a childbearing pattern, observed in many societies, of decreasing fertility with increasing education. The TFR declines from 2.9 children per woman among women with primary or secondary schooling to 2.4 among women with secondary-special schooling and then down to 2.0 children per woman among those with higher education.

Trends in fertility can be inferred 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 (2.5 children per woman) is lower than the CEB (3.1) indicates that fertility has declined in Kazakstan over the past three decades. The TFR is lower than the CEB among both urban and rural women, and in every region, education level, and ethnicity.

Table 3.2 Fertility by background characteristics

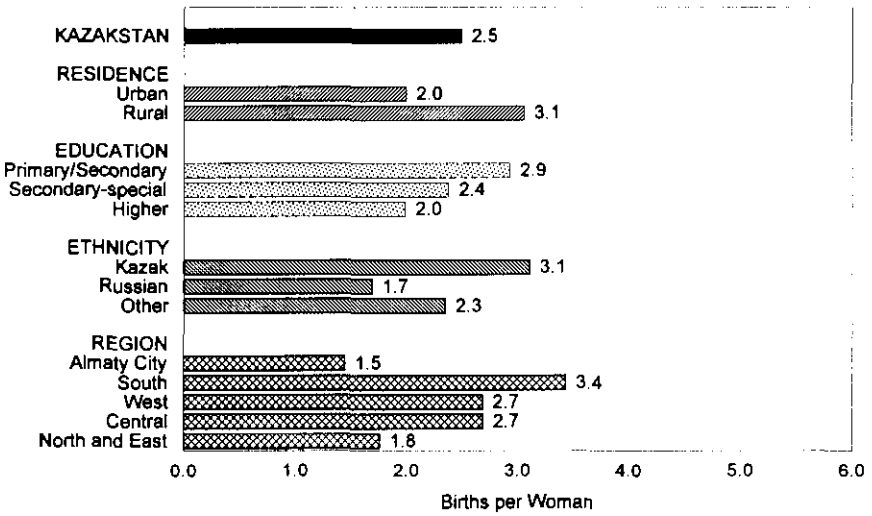
Total fertility rate for the three years preceding the survey, percentage currently pregnant and mean number of children ever born to women age 40-49, by selected background characteristics, Kazakstan 1995

Background characteristic	Total fertility rate[1]	Percentage currently pregnant[1]	Mean number of children ever born to women age 40-49
Residence			
Urban	2.00	2.21	2.46
Rural	3.06	5.81	4.36
Region			
Almaty City	(1.45)	1.46	1.94
South	(3.44)	5.47	4.27
West	(2.69)	4.40	3.42
Central	(2.69)	3.24	3.17
North and East	(1.76)	2.73	2.54
Education			
Primary/Secondary	2.93	3.69	4.09
Secondary-special	2.38	3.75	2.77
Higher	(1.99)	4.01	2.21
Ethnicity			
Kazak	3.11	4.82	4.21
Russian	1.69	2.42	2.25
Other	(2.35)	3.77	2.95
Total	2.49	3.77	3.11

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.
[1] Women age 15-49 years

Table 3.2 also presents the percent of women who report 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 are generally low, commensurate with fertility that is overall relatively low. The percent of women pregnant generally exhibits the same patterns by background characteristics as the TFR. Women with higher education are the one exception; unlike their fertility level, they exhibit the highest percentage pregnant.

Figure 3.2
Total Fertility Rate by Background Characteristics



KDHS 1995

3.2 Fertility Trends

The most direct way of observing fertility trends is to examine changes in age-specific rates over time. Table 3.3 compares age-specific fertility rates (ASFRs) from the KDHS (which were shown in Table 3.1) with ASFRs reported in the 1989 Census. The data provide evidence of declines in fertility among women of all age groups, with the exception of 15-19 year olds, and among both ethnic Kazaks and ethnic Russians. The decline in ASFRs results in an overall decline of the TFR from 3.6 to 3.1 among ethnic Kazaks, and 2.2 to 1.7 among ethnic Russians. The TFR for all of Kazakstan declines from 2.9 to 2.5. Figure 3.3 shows the decline in ASFRs for all Kazakstan.

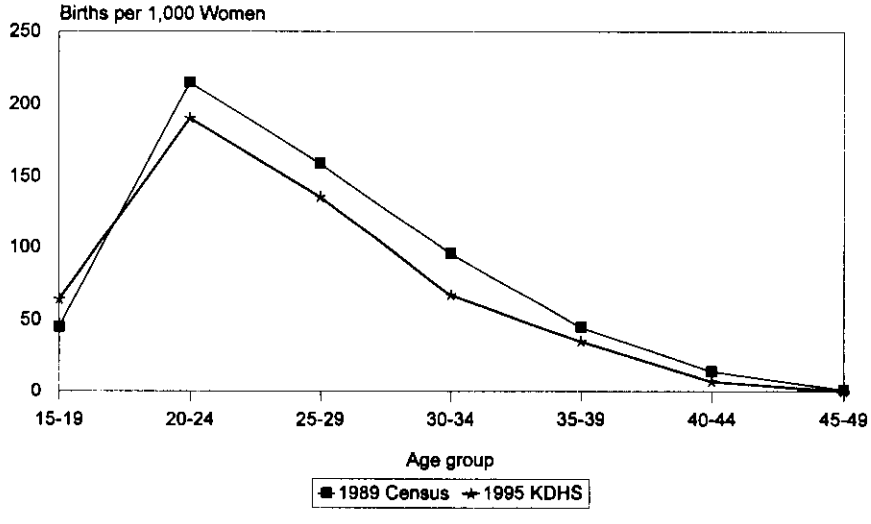
Table 3.3 Trends in fertility

Age-specific fertility rates and total fertility rates, 1989 Census and 1995 KDHS

Age of woman	Kazak		Russian		Total[1]	
	Census 1989	KDHS 1995	Census 1989	KDHS 1995	Census 1989	KDHS 1995
15-19	31	37	59	97	45	64
20-24	232	229	182	125	215	190
25-29	208	180	110	73	159	136
30-34	140	100	63	27	96	67
35-39	76	60	27	15	45	35
40-44	27	14	7	1	14	7
45-49	3	0	0	0	1	0
Total fertility rate	3.58	3.11	2.24	1.69	2.88	2.49

Note: Single-year period rates are used for the Census; three-year period rates are used for the KDHS.
[1] Includes Kazak, Russian, and other ethnic groups.

Figure 3.3
Trends in Age-specific Fertility Rates
1989 Census and 1995 KDHS



Evidence of a recent decline in fertility is also supported by the ASFRs calculated over time from the KDHS data. Table 3.4 presents age-specific fertility rates for five-year periods preceding the survey using data on live births from respondents' pregnancy histories.[2] The decline is steadily greater with increasing age, a pattern indicative of increasing fertility control. The decline from 5-9 to 0-4 years prior to the survey steadily increases from a 5 percent decline among 20-24 year-olds to a 41 percent decline among 35-39 year-olds. Unlike women of other ages, 15-19 year-olds actually show an increase in fertility over time.

Table 3.5 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 of 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 their childbearing and not by young couples postponing births. Table 3.5 shows dramatic declines in fertility for all marital durations of five or more years.

Table 3.4 Trends in age-specific fertility rates

Age-specific fertility rates for five-year periods preceding the survey, by mother's age at the time of birth, Kazakstan 1995

Mother's age	Number of years preceding the survey			
	0-4	5-9	10-14	15-19
15-19	65	45	40	38
20-24	202	212	197	226
25-29	141	173	178	180
30-34	74	97	123	[151]
35-39	33	56	[60]	-
40-44	7	[16]	-	-
45-49	[0]	-	-	-

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

Table 3.5 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, Kazakstan 1995

Marriage duration at birth	Number of years preceding the survey			
	0-4	5-9	10-14	15-19
0-4	312	320	313	336
5-9	113	156	160	179
10-14	59	86	102	142
15-19	20	52	94	*
20-24	7	35	*	-
25-29	3	*	-	-

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.

3.3 Children Ever Born and Living

Table 3.6 presents the distribution of all women and currently married women by number of children ever born. Fifty-six percent of 20-24 year-olds have had one or more children. The modal number of children among all women age 25 and above is two. Thirty-five percent of women age 45-49 have had four or more children. 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 generally fertility-reducing impact of marital dissolution (divorce or widowhood).

The table also shows the mean number of children ever born and the mean number surviving by five-year age group of the mother. On average, women in their early twenties have had 0.8 children, women in their early thirties have had 2 children, and women in their early forties have had 3 children.

[2] The rates for the older age groups (shown in brackets in Table 3.4) represent partial fertility rates due to truncation. Women 50 years of age and older were not included in the survey, and the further back into time that the rates are calculated, the more severe is the truncation. For example, rates cannot be calculated for women age 40-44 for the period 10-14 years before the survey because these women would have been over age 50 years at the time of the survey and thus were not interviewed.

Table 3.6 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, Kazakstan 1995

Age group	Number of children ever born (CEB)											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	93.2	6.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	669	0.07	0.07
20-24	44.2	37.9	14.5	2.9	0.6	0.0	0.0	0.0	0.0	0.0	0.0	100.0	567	0.78	0.75
25-29	17.1	28.7	37.3	11.6	4.4	0.5	0.3	0.0	0.0	0.0	0.0	100.0	521	1.60	1.52
30-34	7.4	18.2	41.1	18.3	8.6	4.8	1.1	0.4	0.0	0.0	0.0	100.0	557	2.23	2.14
35-39	6.8	13.2	36.1	18.2	12.6	6.5	4.0	2.1	0.4	0.1	0.0	100.0	564	2.65	2.50
40-44	5.0	9.9	37.8	18.4	9.4	9.5	4.6	2.6	1.7	0.4	0.7	100.0	537	2.96	2.79
45-49	4.6	12.5	32.2	16.2	9.5	5.8	7.1	5.1	4.1	0.4	2.5	100.0	355	3.35	3.07
Total	28.8	18.0	27.3	11.6	6.1	3.7	2.1	1.2	0.7	0.1	0.3	100.0	3,771	1.82	1.71
CURRENTLY MARRIED WOMEN															
15-19	50.1	44.6	5.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	80	0.55	0.54
20-24	18.8	54.8	21.9	3.6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	347	1.13	1.09
25-29	6.3	30.5	42.6	14.1	5.4	0.6	0.4	0.0	0.0	0.0	0.0	100.0	425	1.85	1.76
30-34	2.1	14.9	44.9	20.8	10.1	5.3	1.4	0.5	0.0	0.0	0.0	100.0	458	2.46	2.36
35-39	3.2	9.5	39.1	20.4	13.5	7.0	4.4	2.3	0.4	0.1	0.0	100.0	482	2.85	2.70
40-44	1.6	7.6	40.4	19.1	10.3	11.0	4.9	2.6	1.6	0.5	0.5	100.0	447	3.11	2.91
45-49	1.0	11.0	30.4	17.1	11.0	7.3	7.9	6.3	4.4	0.4	3.3	100.0	268	3.70	3.40
Total	6.7	21.3	36.6	15.8	8.5	5.1	2.9	1.7	0.8	0.1	0.4	100.0	2,507	2.43	2.30

A cursory view of the survival status of children can be made by comparing the mean number of children ever born to the mean number surviving. Eight percent of children born to women age 45-49 at the time of the survey had not survived. The proportion of children surviving gradually increases among younger women. This may not only be due to shorter exposure to risk among children of younger women, but also due to improved mortality conditions. Overall, of all children born, 94 percent had survived to the time of the survey.

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 3.7 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. Overall, one-third of births (34 percent) were born within 24 months of the previous birth. The median birth interval length is 32 months or about 2.6 years.

The length of birth intervals by region mimics the pattern of fertility; regions with the highest fertility have the shortest birth intervals. In the lowest fertility regions of Almaty city and the North and East Region, birth intervals are the longest, with median lengths of 40 and 41 months, respectively. The West and Central Regions, which have intermediate levels of fertility, both have median birth intervals of 34 months. Women in the South, who have the highest level of fertility, also have the shortest birth intervals. The median length is 27 months; 39 percent of non-first births in the South were born within 24 months of the previous birth.

Birth intervals are significantly longer among births to Russian mothers (median interval length of 44 months) than among births to Kazak mothers (median interval length of 28 months). Thirty-nine percent

Table 3.7 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, Kazakstan 1995

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	*	4
20-29	23.0	23.6	27.9	13.0	12.5	100.0	24.8	414
30-39	11.5	11.6	19.6	15.5	41.7	100.0	40.6	391
40 +	0.0	8.6	14.8	6.3	70.3	100.0	-[1]	45
Birth order								
2-3	18.1	18.6	22.0	13.9	27.5	100.0	30.7	611
4-6	13.8	15.5	24.8	13.2	32.6	100.0	33.2	220
7 +	(0.0)	(11.1)	(43.2)	(15.7)	(30.0)	100.0	(33.6)	22
Sex of prior birth								
Male	17.6	18.2	22.2	13.3	28.7	100.0	31.0	447
Female	15.4	16.9	24.5	14.2	29.0	100.0	32.2	406
Survival of prior birth								
Living	15.4	17.6	22.9	14.2	29.9	100.0	32.1	800
Dead	33.1	17.6	29.4	6.8	13.1	100.0	23.9	53
Residence								
Urban	12.4	13.3	23.1	12.6	38.7	100.0	38.6	322
Rural	19.0	20.2	23.4	14.4	22.9	100.0	28.7	532
Region								
Almaty City	8.6	20.0	18.6	8.6	44.3	100.0	40.0	31
South	18.9	20.1	28.1	11.7	21.1	100.0	26.6	423
West	12.4	19.0	22.2	16.9	29.5	100.0	34.4	119
Central	15.1	17.3	20.3	12.2	35.1	100.0	33.9	79
North and East	15.7	11.2	15.6	17.5	40.1	100.0	41.4	201
Education								
Primary/Secondary	16.7	20.4	25.9	11.6	25.3	100.0	29.6	339
Secondary-special	17.9	15.9	20.9	16.4	29.0	100.0	32.5	391
Higher	11.8	15.2	23.8	10.9	38.3	100.0	34.6	123
Ethnicity								
Kazak	17.7	20.9	23.8	13.5	24.1	100.0	28.0	556
Russian	16.3	5.3	16.5	23.3	38.7	100.0	43.8	146
Other	12.3	17.3	27.8	5.5	37.1	100.0	33.3	151
Total	16.5	17.6	23.3	13.7	28.9	100.0	31.6	853

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 figure is based on fewer than 25 unweighted cases and has been suppressed. Figures in parentheses are based on 25-49 unweighted cases.

[1] Median number is more than 48 months.

of births to Kazak mothers were born within 24 months of the previous birth while 22 percent of births to Russian women were boru within 24 months of the previous birth. Urban and rural women also exhibit significant differentials in birth intervals. Births to urban women have a median interval length of 39 months while births to rural women have a median interval length of 29 months.

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 mother and child. Early initiation into childbearing is generally associated with large family size and rapid population growth when family planning is not widely practiced.

Table 3.8 presents the percent distribution of women by age at first birth according to current age. Initiation into childbearing has a relatively narrow age range in Kazakstan, and the age at which women begin childbearing has not changed significantly over time. One exception seems to be that 20-24 year-olds are beginning childbearing at younger ages than women have in the past. Nearly one-third of the 20-24 year-olds have had a birth by age 20.

Table 3.8 Age at first birth

Percent distribution of women 15-49 by age at first birth, according to current age, Kazakstan 1995

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	93.2	0.0	3.5	3.3	NA	NA	NA	100.0	669	a
20-24	44.2	0.0	6.5	22.8	18.0	8.5	NA	100.0	567	a
25-29	17.1	0.1	3.3	14.4	25.5	30.4	9.1	100.0	521	22.5
30-34	7.4	0.0	4.1	14.1	27.3	30.4	16.8	100.0	557	22.4
35-39	6.8	0.0	2.2	15.1	29.8	25.7	20.4	100.0	564	22.2
40-44	5.0	0.0	3.4	12.7	33.5	27.6	17.8	100.0	537	22.0
45-49	4.6	0.0	7.9	16.4	23.8	28.9	18.4	100.0	355	22.1

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

Table 3.9 presents the median age at first birth for cohorts age 25 and above across background characteristics. The median age at first birth hovers around age 22 for all age cohorts. The greatest differentials are by education; the median age increases by two to three years with increasing education.

Table 3.9 Median age at first birth

Median age at first birth among women age 25-49 years, by current age and selected background characteristics, Kazakstan 1995

Background characteristic	Current age					Ages 25-49
	25-29	30-34	35-39	40-44	45-49	
Residence						
Urban	22.3	22.7	22.4	22.6	22.5	22.4
Rural	22.8	22.3	21.9	21.5	21.6	22.1
Region						
Almaty City	22.8	23.2	23.4	23.1	23.3	23.1
South	22.7	23.0	22.1	21.9	22.2	22.4
West	23.2	23.2	22.6	22.0	21.8	22.7
Central	23.1	22.4	22.7	22.1	22.0	22.4
North and East	21.8	21.7	21.9	22.0	22.0	21.9
Education						
Primary/Secondary	21.0	21.7	21.9	21.6	20.5	21.5
Secondary-special	22.3	22.2	22.0	21.9	22.6	22.1
Higher	24.0	23.8	23.4	23.9	24.6	23.9
Ethnicity						
Kazak	23.3	22.9	23.0	22.4	22.7	22.9
Russian	21.6	21.7	21.6	21.7	21.8	21.7
Other	22.0	22.6	22.1	22.2	21.7	22.2
Total	22.5	22.4	22.2	22.0	22.1	22.3

Note: The medians for cohorts 15-19 and 20-24 could not be determined because half the women have not yet had a birth.

3.6 Pregnancy and Motherhood Among Women Age 15-19

Fertility among women age 15-19 warrants special attention because young mothers at this age as well as their children are at high risk of encountering social and health problems. There has been much research on this topic, and 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 3.10 presents the percentage of women age 15-19 who are mothers or are pregnant with their first child. Overall, 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, the percentage of women who become mothers increases during the teenage years, so that one-quarter (26 percent) of 19 year-olds have begun childbearing.

Table 3.10 Pregnancy and motherhood among women age 15-19

Percentage of women 15-19 who are mothers or pregnant with their first child, by selected background characteristics, Kazakstan 1995

Background characteristic	Percentage who are: Mothers	Pregnant with first child	Percentage who have begun child-bearing	Number of women
Age				
15	0.0	0.0	0.0	144
16	0.0	0.0	0.0	136
17	3.3	1.7	5.0	140
18	10.4	5.1	15.5	125
19	22.5	3.3	25.8	123
Residence				
Urban	7.1	1.0	8.1	356
Rural	6.5	2.9	9.4	313
Region				
Almaty City	5.3	0.0	5.3	34
South	6.7	2.7	9.3	255
West	8.4	1.6	10.0	85
Central	7.9	0.7	8.6	65
North and East	6.2	1.8	8.1	230
Education				
Primary/Secondary	4.8	1.8	6.6	425
Secondary-special	12.8	2.1	14.9	191
Higher	(1.1)	(2.1)	(3.2)	53
Ethnicity				
Kazak	5.0	2.1	7.0	327
Russian	9.9	2.3	12.2	212
Other	6.3	0.9	7.1	130
Total	6.8	1.9	8.7	669

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

The percent of women age 15-19 who have begun childbearing varies from 5 to 10 percent across the regions of Kazakstan. Women age 15-19 with secondary-special education are the most likely to become mothers (13 percent have already given birth). Women age 15-19 of Russian ethnicity are more likely than women of Kazak ethnicity to have begun childbearing (12 versus 7 percent).

Table 3.11 indicates that 20 percent of women age 19 have one child, and that 3 percent have two or more children. The percentage of women age 15-19 with one or more children increases with age from 3 percent among women age 17 to 23 percent among those age 19.

Table 3.11 Children born to women age 15-19

Percent distribution of women 15-19 by number of children ever born (CEB), according to single year of age, Kazakstan 1995

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	144
16	100.0	0.0	0.0	100.0	0.00	136
17	96.7	3.3	0.0	100.0	0.03	140
18	89.6	9.9	0.5	100.0	0.11	125
19	77.5	19.6	3.0	100.0	0.25	123
Total	93.2	6.1	0.6	100.0	0.07	669

CHAPTER 4

CONTRACEPTION

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The 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 available financial and technical resources.

In the republics of the former Soviet Union, family planning primarily consisted of the use of traditional contraceptive methods through the 1960s. Low levels of infrastructure and technology, as well as knowledge and attitudes towards family planning, limited use of modern methods. Historically, the status of a Kazak woman in the family was such that the number of children she was to bear was determined not only by the husband and wife as a couple, but also by the husband's family. These factors, as well as many others, have resulted in high levels of reliance on induced abortion as a means of fertility control. Only recently has the Ministry of Health actively engaged in efforts to reduce the heavy reliance upon abortion by providing safe and effective modern contraceptive methods (Foreit and McCombie, 1995). Family planning offices have been opened in most *oblasts* and regional centers, in both large cities and villages. These offices, spanning most of the Republic, offer women professional advice and a supply of family planning methods.

With the transition of the Republic to a market economy and the accompanying general reduction in living standards, desires to limit family size seem to be on the rise. Statistics on the number of IUD and pill users obtaining supplies from government facilities have been maintained by the Ministry of Health since 1988. These statistics indicate a substantial increase in contraceptive use between 1988 and 1993: the prevalence rate for these two methods increased by 48 percent, from 20 to 29 percent of all women age 15-49 (Church and Koutanev, 1995).

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 KDHS. Data on 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 any 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 interviewed, and separately for currently married women,[1] sexually active unmarried women, and women who have never had sexual intercourse. The knowledge of at least one method of contraception is nearly universal (98 percent). Also, 98 percent of respondents know at least one modern method and 75 percent know at least one traditional method. Women know, on average, five methods of contraception. The average number of methods known varies by marital status of the respondents. Currently married women know an average of 5.8 methods, while unmarried women who are sexually active know of 6.7 methods, and women who have never had sex know on average 3.7 methods (71 percent of women who have never had sex are women age 15-19).

Table 4.1 Knowledge of contraceptive methods

Percentage of all women, of currently married women, of sexually active unmarried women, and of women who have never had sex, who know specific contraceptive methods, by specific methods, Kazakstan 1995

Contraceptive method	All women	Currently married women	Sexually active unmarried women	Women who never had sex
Any method	97.6	99.3	99.2	91.7
Any modern method	97.6	99.3	99.2	91.7
Pill	78.8	81.8	97.2	62.7
IUD	95.9	99.0	98.8	84.8
Injectables	33.3	35.2	54.0	21.9
Diaphragm/Foam/Jelly	43.2	48.7	63.4	19.4
Condom	87.6	89.2	99.2	78.8
Female sterilization	59.2	64.5	68.3	36.2
Any traditional method	75.2	82.8	93.8	42.8
Periodic abstinence	68.3	75.1	87.5	37.8
Withdrawal	55.3	61.3	81.2	25.8
Douche	18.8	22.0	15.0	6.0
Other	3.3	3.4	6.3	1.2
Any traditional/folk method	75.3	82.8	93.8	42.9
Number of women	3,771	2,507	136	751
Mean number of methods	5.4	5.8	6.7	3.7

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

The most commonly known method is the IUD (known by 96 percent of all women). The condom and the pill are the next most commonly known methods, known by 88 and 79 percent of women, respectively. The lesser known modern methods are still known by a significant proportion of women—59 percent have knowledge of female sterilization (although historically this method was carried out only for medical reasons), 43 percent know vaginal barrier methods such as the diaphragm, foam or jelly, and 33 percent know injectables. The data in Table 4.1 show that sexually active unmarried women are generally more informed about modern methods than are currently married women. Knowledge of the IUD, condom, and pill is universal among sexually active unmarried women (99, 99 and 97 percent, respectively), and they are also more likely to know of the lesser known modern methods as well. While women who have never had sex are less likely to know of methods than are married or sexually active unmarried women, more than three-quarters of such women do know of the IUD (85 percent) and the condom (79 percent). For purposes of communicating family planning information, women of reproductive age who have not yet engaged in sexual intercourse are an equally important audience as are sexually active women because these women are certain to engage in sexual activity in the near future.

Periodic abstinence and withdrawal are commonly known traditional methods among currently married and sexually active unmarried women. Periodic abstinence is known by 75 percent of currently married women and 88 percent of sexually active unmarried women; withdrawal is known to 61 percent and 81 percent, respectively. Traditional methods are not as commonly known among women who have never had sex (38 percent have heard of periodic abstinence and 26 percent have heard of withdrawal). Vaginal douche is known to 22 percent of married women and 15 percent of sexually active unmarried women. Folk methods mentioned by respondents include herbs, segment of a lemon, aspirin, iodine, vinegar, wine and others.

Table 4.2 presents the percent of currently married women who know of at least one method of contraception (modern or traditional) and the percent who know of at least one modern method, by background characteristics of the respondents. 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 method and at least one modern method by selected background characteristics, Kazakstan 1995

Background characteristic	Knowledge of contraception: Knows any method	Knowledge of contraception: Knows modern method	Number of women
Age			
15-19	95.8	95.8	80
20-24	99.7	99.6	347
25-29	99.6	99.6	425
30-34	99.8	99.8	458
35-39	99.1	99.1	482
40-44	99.1	99.1	447
45-49	99.0	99.0	268
Residence			
Urban	99.6	99.6	1,398
Rural	98.9	98.9	1,109
Region			
Almaty City	100.0	100.0	164
South	98.4	98.4	811
West	99.4	99.4	298
Central	99.5	99.3	235
North and East	99.8	99.8	1,000
Education			
Primary/Secondary	98.4	98.3	797
Secondary-special	99.7	99.7	1,259
Higher	99.7	99.7	450
Ethnicity			
Kazak	98.7	98.6	1,064
Russian	100.0	100.0	930
Other	99.2	99.2	513
Total	99.3	99.3	2,507

4.2 Ever Use of Contraception

All respondents who had heard of a method of contraception were asked whether they (or a partner with them) had ever used the method; each method was inquired about separately. An additional probe for use was made for women who reported no contraceptive use. Results are presented in Table 4.3 for all women by five-year age groups, for currently married women by five-year age groups, and for sexually active unmarried women.

Overall, 84 percent of currently married women and 78 percent of sexually active unmarried women have used a method of contraception at some time in their life. Sixty-five 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 51 percent of currently married 15-19 year-olds have ever used a method, only 12 percent of all 15-19 year-olds have done so; however, only 20 percent of all 15-19 year-olds have ever had sex.

The women who are the most likely to have ever used a method of contraception are those age 25-44 among the currently married and age 30-44 among all women (83-90 percent of these women have used a method of contraception). These women are also the most likely to have used a modern method of contraception.

The method that is by far the most widely ever used is the IUD. Overall, 46 percent of all women of reproductive age have used an IUD at some time. Three out of four currently married women in their thirties have used an IUD at some time in their life (and two out of three women age 25-29 and 40-44 have done so). Condoms are the next most commonly tried method; approximately one of every three currently married women has used a condom at some time. Condoms are the most likely method to have been tried among sexually active unmarried women. Pills are the third most commonly tried modern method;

Table 4.3 Ever use of contraception

Percentage of all women, of currently married women, and of sexually active unmarried women who have ever used any contraceptive method, by specific method and age, Kazakstan 1995

		Modern method					Traditional method						
Age	Any method	Any modern method	Pill	IUD	Condom	Other modern[1]	Any trad. method	Periodic absti-nence	With-drawal	Douche	Other methods	Any trad./ folk method	Number of women
						ALL WOMEN							
15-19	11.9	8.2	2.1	1.2	6.4	0.2	9.7	4.4	5.6	2.8	0.1	9.7	669
20-24	55.7	47.2	8.7	26.8	27.2	1.2	35.4	18.3	21.1	11.9	0.9	35.5	567
25-29	74.7	71.2	20.5	58.7	34.5	3.8	35.6	20.0	19.4	9.2	0.3	35.7	521
30-34	84.2	79.5	19.9	68.3	33.3	7.6	44.8	26.6	20.5	14.6	0.8	44.8	557
35-39	82.8	77.1	20.9	68.0	33.4	5.6	47.8	30.6	22.3	15.8	1.4	48.0	564
40-44	85.9	78.7	17.5	64.8	39.0	6.9	49.4	30.7	25.6	17.0	1.8	50.0	537
45-49	74.5	63.1	11.7	44.8	31.6	7.8	45.2	28.3	21.5	17.5	1.8	46.3	355
Total	64.9	58.8	14.2	46.1	28.4	4.4	37.0	21.9	18.9	12.2	0.9	37.3	3,771
						CURRENTLY MARRIED WOMEN							
15-19	50.9	31.5	6.9	7.6	18.4	0.5	42.3	15.9	18.6	17.3	0.8	42.3	80
20-24	71.7	61.9	11.0	38.6	33.6	1.6	41.9	19.0	25.7	14.0	0.7	42.0	347
25-29	83.3	80.3	22.8	67.0	38.9	4.3	38.2	21.6	21.1	10.2	0.1	38.2	425
30-34	89.6	86.0	21.5	73.7	35.6	7.6	46.6	26.9	22.5	15.2	0.8	46.6	458
35-39	88.3	83.1	21.6	74.3	35.6	6.2	51.1	32.7	23.9	16.8	0.9	51.4	482
40-44	89.6	82.6	18.4	69.1	41.6	8.1	53.3	33.0	28.7	17.3	1.9	54.0	447
45-49	79.1	67.1	12.8	49.5	33.4	7.6	47.0	30.0	22.6	17.4	1.3	47.6	268
Total	83.5	76.8	18.3	62.3	36.2	5.8	46.5	27.1	24.0	15.2	0.9	46.7	2,507
						SEXUALLY ACTIVE UNMARRIED WOMEN							
Total	78.4	68.9	25.0	31.1	49.0	3.9	59.7	39.4	34.5	11.9	1.9	60.0	136

[1] Includes injectables and diaphragm

nearly one in five currently married women has used them at some time in their life. Other modern methods (injectables and diaphragm) have been used at some time by only 6 percent of married women.

While more women have used modern than traditional methods, many women have in fact used a traditional method at some time. Overall, nearly half of all currently married women have used a traditional method at some time in their life, while 37 percent of all women have done so. The sexually active unmarried women are the most likely to have ever used a traditional method (60 percent).

Periodic abstinence and withdrawal are the traditional methods most likely to have been tried by women at some time in their life. Twenty-seven percent of married women have used periodic abstinence at some time, and 24 percent have used withdrawal at some time. Sexually active unmarried women are more likely to have used both of these methods at some time in their life (39 percent have used periodic abstinence and 35 percent have used withdrawal at some time). Fifteen percent of married women and 12 percent of sexually active unmarried women have used vaginal douching as a method of contraception at some time in their life.

4.3 Current Use of Contraception

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

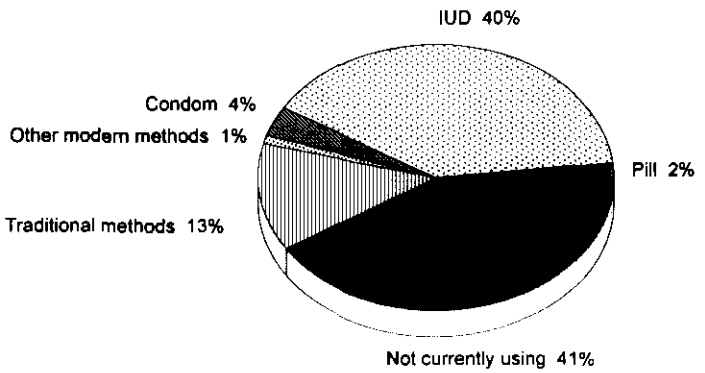
Table 4.4 Current use of contraception

Percent distribution of all women, of currently married women, and of sexually active unmarried women who are currently using a contraceptive method by specific method, according to age, Kazakstan 1995

		Modern method					Traditional method						
Age	Any method	Any modern method	Pill	IUD	Condom	Other modern[1]	Any trad. method	Periodic absti-nence	With-drawal	Douche	Not currently using	Total	Number of women
						ALL WOMEN							
15-19	7.1	4.7	0.8	1.0	2.8	0.0	2.4	0.4	1.0	1.0	92.9	100.0	669
20-24	35.1	25.0	2.0	18.0	4.8	0.3	10.1	4.9	2.6	2.6	64.9	100.0	567
25-29	53.3	44.5	2.5	38.1	3.0	1.0	8.8	3.7	3.1	2.0	46.7	100.0	521
30-34	64.9	53.7	1.5	47.5	3.3	1.4	11.2	6.1	3.0	2.1	35.1	100.0	557
35-39	61.8	48.4	1.7	41.7	4.6	0.5	13.3	8.8	2.1	2.4	38.2	100.0	564
40-44	54.8	40.9	1.4	35.3	2.5	1.7	14.0	7.6	3.3	3.1	45.2	100.0	537
45-49	28.5	19.6	0.0	16.0	2.6	1.0	8.7	4.7	0.3	3.7	71.5	100.0	355
Total	43.3	33.6	1.5	27.9	3.4	0.8	9.6	5.0	2.3	2.3	56.7	100.0	3,771
						CURRENTLY MARRIED WOMEN							
15-19	31.5	14.4	6.1	6.5	1.8	0.0	17.1	3.2	6.2	7.7	68.5	100.0	80
20-24	47.0	34.1	2.5	27.2	4.1	0.3	12.9	5.2	3.8	4.0	53.0	100.0	347
25-29	61.0	51.0	2.3	44.1	3.4	1.2	10.0	4.2	3.4	2.4	39.0	100.0	425
30-34	71.7	60.6	1.1	54.0	3.9	1.5	11.1	5.5	3.5	2.1	28.3	100.0	458
35-39	69.5	54.6	1.9	47.4	4.9	0.5	14.9	9.6	2.5	2.8	30.5	100.0	482
40-44	63.3	47.0	1.7	40.4	2.8	2.0	16.4	8.7	4.0	3.8	36.7	100.0	447
45-49	32.6	21.7	0.0	18.1	3.3	0.3	10.7	5.4	0.4	4.9	67.4	100.0	268
Total	59.1	46.1	1.8	39.6	3.7	1.0	13.0	6.5	3.2	3.3	40.9	100.0	2,507
						SEXUALLY ACTIVE UNMARRIED WOMEN							
Total	57.9	39.1	5.0	13.7	19.3	1.1	18.8	14.0	4.5	0.3	42.1	100.0	136

Note: Totals may not add to 100.0 due to rounding.
[1] Includes injectables and diaphragm

Figure 4.1
Use of Specific Contraceptive Methods among Currently Married Women



KDHS 1995

One out of every three women of reproductive age is currently using a modern method of contraception (34 percent); one out of every 10 is using a traditional method (10 percent). Nearly one out of every two currently married women is currently using a modern method of contraception (46 percent), and 13 percent are using a traditional method.[2] The IUD is by far the most commonly used method—two out of every three currently married women who are using some method of contraception are using the IUD. The collection of traditional methods represents the second most commonly used method; one out of five currently married women who are using some method of contraception are using either periodic abstinence, withdrawal, or douche.

Prevalence among sexually active unmarried women (58 percent) is the same as among currently married women; however, the former exhibit a greater method mix than the latter. There is much less reliance upon the IUD among sexually active unmarried women and greater use of all other methods (both modern and traditional) compared to married women. Condoms are the most commonly used method (19 percent) and sexually active unmarried women are as equally likely to be using periodic abstinence (14 percent) as they are to be using the IUD (14 percent). Five percent of these women are using pills, and 5 percent are using withdrawal.

[2] It is worth comparing the contraceptive prevalence statistics which are published by the Ministry of Health (MOH) with those computed from KDHS data. The MOH collects data and publishes statistics on IUD and pill users relative to all women of reproductive age (i.e., all women 15-49). According to the MOH data, the percentage of IUD and pill users among women age 15-49 for 1993 were 27.8 and 1.4, respectively (Church and Koutanev, 1995). These are virtually identical to the KDHS rates of 27.9 and 1.5 for 1995 (Table 4.4). In spite of the two-year time difference in the date to which these statistics apply, the results are remarkably similar, substantiating the reliability of the data collected by the MOH and the KDHS survey.

Use of contraception increases steadily by age, peaking at age 30-34 (61 percent of currently married women are using a modern method), 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 one's reproductive life; use of contraception in relation to the age and fertility preferences of women 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. Perhaps the most significant finding of Table 4.5 and Figure 4.2 is that the level of modern contraceptive use observed for the population as a whole is maintained across background characteristics of respondents. Most of the differentials observed in overall levels of use can be attributed to differential levels of use of traditional methods. For example, urban women are slightly more likely than rural women to be using a method of contraception (62 and 56 percent, respectively), but most of the differential can be attributed to higher use of traditional methods among urban women.

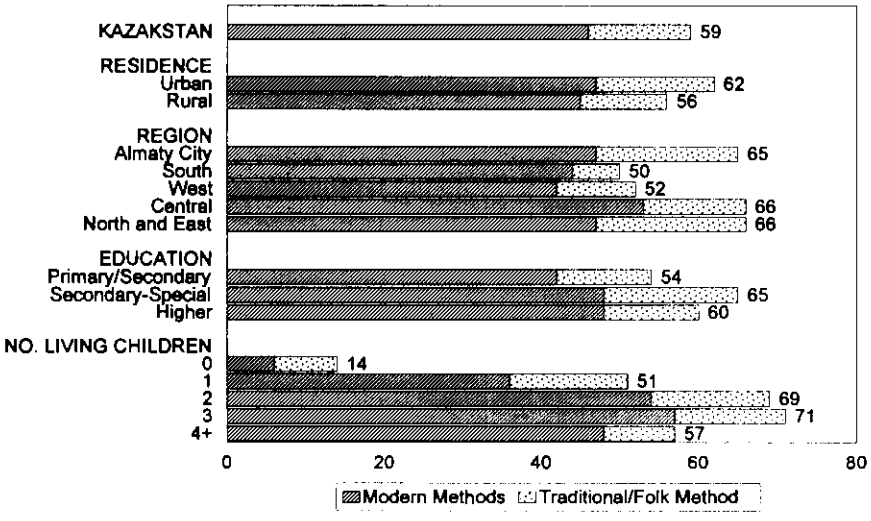
Table 4.5 Current use of contraception by background characteristics

Percent distribution of currently married women by contraceptive method currently used, according to selected background characteristics, Kazakstan 1995

		Modern method					Traditional method						
Characteristic	Any method	Any modern method	Pill	IUD	Condom	Other modern[1]	Any trad. method	Periodic absti-nence	With-drawal	Douche	Not currently using	Total	Number of women
Residence													
Urban	61.9	47.0	2.3	39.2	4.4	1.0	14.8	7.9	2.1	4.8	38.1	100.0	1,398
Rural	55.6	44.9	1.1	40.0	2.8	0.9	10.7	4.7	4.5	1.5	44.4	100.0	1,109
Region													
Almaty City	64.4	47.2	5.1	29.9	9.2	3.0	17.3	11.3	1.9	4.0	35.6	100.0	164
South	50.2	44.3	0.6	41.5	1.6	0.6	5.9	3.3	0.8	1.8	49.8	100.0	811
West	51.9	41.6	0.8	37.5	3.0	0.2	10.1	6.2	1.5	2.4	48.1	100.0	298
Central	66.2	52.5	1.5	44.8	4.6	1.5	13.5	5.3	2.7	5.5	33.8	100.0	235
North and East	66.0	47.2	2.6	39.0	4.5	1.1	18.8	8.6	5.9	4.2	34.0	100.0	1,000
Education													
Primary/Secondary	51.9	41.8	0.7	36.6	3.5	0.9	10.0	3.4	4.1	2.5	48.1	100.0	797
Secondary-special	62.0	48.2	1.9	42.3	3.0	1.1	13.7	7.2	3.1	3.4	38.0	100.0	1,259
Higher	64.0	47.6	3.4	37.2	6.2	0.8	16.3	9.9	1.8	4.7	36.0	100.0	450
Ethnicity													
Kazak	53.5	46.8	0.5	43.6	2.0	0.6	6.7	4.0	0.7	2.1	46.5	100.0	1,064
Russian	65.1	45.3	3.9	35.3	4.5	1.6	19.7	9.6	5.1	5.1	34.9	100.0	930
Other	59.9	46.0	0.5	38.9	6.0	0.7	13.9	6.0	5.0	2.9	40.1	100.0	513
Number of living children													
0	13.8	5.5	1.8	1.4	2.1	0.2	8.3	4.5	0.6	3.2	86.2	100.0	181
1	51.1	36.2	2.9	29.3	3.5	0.6	14.9	6.9	4.0	4.0	48.9	100.0	562
2	68.6	54.4	1.8	46.9	4.4	1.3	14.1	7.6	3.2	3.3	31.4	100.0	938
3	71.0	56.8	0.7	50.4	4.9	0.9	14.1	7.1	3.9	3.1	29.0	100.0	396
4+	57.0	47.8	1.3	43.2	2.1	1.3	9.1	3.8	2.4	2.9	43.0	100.0	431
Total	59.1	46.1	1.8	39.6	3.7	1.0	13.0	6.5	3.2	3.3	40.9	100.0	2,507

[1] Includes injectables and diaphragm

Figure 4.2
Current Use of Family Planning by Background Characteristics



Note: Currently married women age 15-49

KDHS 1995

Contraceptive use by region does not vary to the degree that might be expected from the fertility differentials by region. Approximately one out of every two women is using a method of contraception in both the South and West Regions, while two in three are using a method in the Central, the North and East, and the Almaty City Regions. The correlation of contraceptive use with fertility levels is not very clear by region; for example, the West has an intermediate level of fertility and a relatively lower level of use (one in two women is using a method), while the Central Region, which also has an intermediate level of fertility, has a relatively higher level of use (two in three women is using a method). 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.

Women with primary or secondary education have lower levels of contraceptive use (52 percent) than do women with more education. However, women with secondary-special and higher education have similar levels of use (62 and 64 percent). Kazak and Russian women are equally likely to be using a modern method of contraception (47 and 45 percent, respectively). However, Russian women are more likely than Kazak women to be using a traditional method (20 percent and 7 percent, respectively) resulting in a higher overall level of use among Russian women. The level of contraceptive use increases with increasing numbers of living children, but then declines among women with four or more children. Use of contraception among married women with no children is quite low (6 percent are using a modern method and 8 percent are using a traditional method).

Any differentials in method mix are overshadowed by the heavy reliance on the IUD among women of all background characteristics (the only exception being women with no children). However, the broadest method mix is observed among women in Almaty City. While use of the IUD still predominates (30 percent), use of modern methods other than the IUD is higher in Almaty City than any other region: condoms (9 percent), the pill (5 percent), and other modern methods (3 percent). Nevertheless, even with this broader

mix of modern methods, periodic abstinence still ranks as the second most commonly used method (11 percent) among women in Almaty City, as it does for Kazakstan as a whole.

Users of the pill were asked to present their pill package to the interviewer, who then proceeded to record the brand name of the pills. Respondents who were unable to present the package were asked to report the brand name of their pills. Table 4.6 presents the percentage of women who are using the pill and the percentage of pill users who presented their pill packages to interviewers, by background characteristics of respondents. Table 4.7 presents the distribution of pill users by their brand of pills. Both tables present data for all pill users, regardless of marital status.

Table 4.6 Pill use and possession

Percentage of all women using the pill and the percentage of pill users who have a packet at home, by background characteristics, Kazakstan 1995

Background characteristic	Percent using pill	Number of women	Percentage of users who could show package
Age			
15-19	0.8	669	57.1
20-24	2.0	567	84.3
25-29	2.5	521	73.7
30-34	1.5	557	78.5
35-39	1.7	564	74.5
40-44	1.4	537	38.3
45-49	0.0	355	-
Residence			
Urban	2.0	2,133	79.5
Rural	0.8	1,638	39.7
Region			
Almaty City	5.0	271	58.1
South	0.4	1,206	62.4
West	1.0	477	74.5
Central	1.1	358	54.4
North and East	1.9	1,458	79.1
Education			
Primary/Secondary	0.6	1,376	59.6
Secondary-special	1.4	1,721	61.0
Higher	3.3	670	84.2
Ethnicity			
Kazak	0.5	1,696	54.8
Russian	3.3	1,309	72.4
Other	0.4	766	84.6
Total	1.5	3,771	70.3

Pill use is highest among women age 25-29 years (3 percent), urban women (2 percent), women living in Almaty (5 percent), women with higher education (3 percent), and Russian women (3 percent). Overall, 70 percent of pill users were able to present their packets to the interviewer; however, there was variability in the ability to do so by background characteristics of the respondents. Urban women were twice as likely (80 percent) as rural women (40 percent) to present a packet to the interviewer. Women with higher education were more likely to show a packet (84 percent) than women with less education (60 percent). And finally, 72 percent of Russian women presented a packet, while 55 percent of Kazak women did so.

Table 4.7 Use of pill brands

Percent distribution of pill users by the brand of pills used, Kazakstan 1995

Pill brand	Total
Diane-35	8.1
Lo-femenal	1.6
Marvelon	2.4
Microgynon	5.0
Non-ovlon	8.5
Ovidon	7.0
Postinor	5.0
Rigevidon	8.7
Triquilar	21.0
Triquilar ED Fe	14.5
Anteovin	2.4
Don't know/missing	15.8
Total	100.0
Number	55

Table 4.7 reveals that there are 11 brands of pills being used, with the most common being Triquilar (36 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 4.8 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.

Use of family planning to delay the first pregnancy is uncommon in Kazakstan (11 percent of women have done so). However, the steady increase in percent of first-time users with no children at younger ages indicates that the number of women who wish to delay their first child has been increasing over time. Twenty-four percent of ever-married 20-24 year-olds and 31 percent of 15-19 year-olds have used a method before ever having a child. The decreasing median number of living children at time of first use at younger ages also indicates that more women are now acting to delay their first pregnancy than they have in the past. Older women (over the age of 35) had a median of 2.0 children before they first used contraception; younger women have a median of approximately 1.5 children at their first use of contraception.

Thirty-seven percent of ever-married women had one living child at the time they first used a method of contraception; this percent does not change greatly with age, with the exception of 15-19 year-olds, among whom 17 percent first used a method after having one living child.

Table 4.8 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, Kazakstan 1995

Current age	Never used contra-ception	Number of living children at time of first use of contraception					Total	Number of women	Median
		0	1	2	3	4+			
15-19	48.8	30.5	17.4	3.3	0.0	0.0	100.0	90	0.8
20-24	27.5	24.2	38.9	9.2	0.3	0.0	100.0	387	1.3
25-29	18.5	17.3	37.0	22.9	2.6	1.6	100.0	468	1.6
30-34	12.4	9.9	40.5	26.4	6.9	4.0	100.0	531	1.8
35-39	14.4	6.0	38.2	24.2	7.1	10.1	100.0	540	2.0
40-44	12.4	4.3	38.9	22.4	9.3	12.7	100.0	525	2.0
45-49	24.5	4.5	33.1	18.0	6.5	13.4	100.0	345	2.0
Total	18.3	11.3	37.4	20.7	5.5	6.8	100.0	2,886	1.8

4.5 Knowledge of Fertile Period and Contraceptive Effects 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 4.9 presents the percent distribution of all women, women who have ever used periodic abstinence, and women who have ever used the calendar rhythm method by their knowledge of the fertile period.

Table 4.9 Knowledge of fertile period

Percent distribution of all women and of those who currently use periodic abstinence or the calendar rhythm method, by knowledge of the fertile period during the ovulatory cycle, Kazakstan 1995

Perceived fertile period	All women	Current users of:	
		Periodic abstinence	Calendar rhythm
During menstrual period	0.7	0.7	0.7
Right after period has ended	4.1	4.5	4.0
In the middle of the cycle	29.3	87.3	88.0
Just before period begins	1.0	1.5	1.4
At any time	28.6	2.6	2.7
Other	0.1	0.0	0.0
Don't know	36.2	3.3	3.2
Total	100.0	100.0	100.0
Number	3,771	190	185

Note: Five respondents reported using the symptothermal method.

Only 29 percent of all respondents properly identify the middle of the cycle as the most likely time to become pregnant. Most of the remaining respondents said either that there is no time which is more likely than another (29 percent of all women), or simply did not know (36 percent of all women). On the other hand, most women who are using either periodic abstinence or the calendar rhythm method know about the varying likelihood to become pregnant. Eighty-seven percent of women who are using periodic abstinence and 88 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, if any, they perceive the effects of breastfeeding to be 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 presented in Table 4.10 for currently married women.

Table 4.10 Perceived contraceptive effect of breastfeeding

Percent distribution of currently married women by perceived risk of pregnancy associated with breastfeeding and percentage who previously relied on breastfeeding to avoid pregnancy, who currently rely on breastfeeding to avoid pregnancy and who meet lactational amenorrheic method (LAM) criteria, according to selected background characteristics, Kazakstan 1995

Background characteristic	Perceived risk of pregnancy associated with breastfeeding					Total	Reliance on breastfeeding to avoid pregnancy		Meet LAM criteria[1]	Number of women
	Un-changed	In-creased	De-creased	Depends	Don't know		Previ-ously	Cur-rently		
Age										
15-19	58.3	10.2	22.2	5.5	3.8	100.0	15.1	6.7	1.4	80
20-24	58.2	6.2	27.6	6.5	1.4	100.0	15.0	10.8	2.4	347
25-29	57.2	6.6	28.2	5.7	2.4	100.0	14.9	9.9	2.1	425
30-34	57.1	5.8	28.3	8.5	0.3	100.0	17.3	11.7	0.9	458
35-39	57.9	6.5	28.1	6.5	0.9	100.0	18.5	10.9	0.4	482
40-44	48.4	4.4	38.4	8.0	0.8	100.0	22.1	10.2	0.2	447
45-49	43.6	7.8	37.0	10.5	1.1	100.0	20.1	7.5	0.0	268
Residence										
Urban	56.6	5.1	29.9	7.3	1.1	100.0	15.6	8.6	1.0	1,398
Rural	51.8	7.7	31.7	7.5	1.3	100.0	20.8	12.3	1.1	1,109
Region										
Almaty City	55.8	7.3	31.3	3.5	2.2	100.0	13.2	6.2	0.8	164
South	49.5	7.3	37.6	4.9	0.6	100.0	22.4	15.5	1.5	811
West	47.4	13.1	19.9	19.5	0.0	100.0	15.1	10.1	2.3	298
Central	60.9	6.1	28.9	2.9	1.3	100.0	14.4	4.5	1.2	235
North and East	58.9	3.2	28.6	7.4	1.9	100.0	16.7	8.1	0.2	1,000
Education										
Primary/Secondary	56.0	7.8	27.1	7.8	1.4	100.0	18.1	12.1	1.0	797
Secondary-special	52.9	6.6	32.2	7.1	1.2	100.0	18.6	9.1	1.2	1,259
Higher	56.3	2.5	32.9	7.4	1.0	100.0	15.4	10.1	0.6	450
Ethnicity										
Kazak	49.0	8.5	34.5	6.9	1.1	100.0	21.3	14.2	1.9	1,064
Russian	58.3	4.2	28.8	6.9	1.8	100.0	15.6	7.4	0.4	930
Other	58.8	5.2	26.2	9.3	0.5	100.0	14.9	7.2	0.4	513
Total	54.5	6.2	30.7	7.4	1.2	100.0	17.9	10.2	1.0	2,507

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

One-third of women (31 percent) report that breastfeeding reduces the risk of becoming pregnant, and the percent of women who report a decreasing effect of breastfeeding increases with age. While urban and rural women are equally likely to report a decreasing effect, women in the West are the least likely to do so (20 percent). Women in the West are more likely than women in other regions to report that breastfeeding increases the risk of pregnancy (13 percent), as well as to report that it depends on other factors (20 percent). Approximately half (55 percent) of currently married women believe that breastfeeding has no effect on the risk of becoming pregnant; this level is maintained across most background characteristics.

Eighteen percent of currently married women have used breastfeeding as a means of contraception at some time in their lives, and 10 percent of women report they are currently doing so. Women in the South are the most likely to have used breastfeeding for family planning purposes (22 percent) and are also the most likely to be current users (16 percent). Women in the South are also the most likely to report the decreasing effect of breastfeeding on fecundity (38 percent). Kazak women are more likely than Russian women to report themselves as currently using breastfeeding as a method of contraception (14 and 7 percent, respectively). Table 4.10 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 whose is less than six months old, and she must also be amenorrheic. One percent of women meet the LAM criteria, and this percent varies by background characteristics between 0 and 2 percent of women.

4.6 Source of Family Planning Methods

In Kazakstan, modern methods of contraception, such as the IUD, the pill, condoms, and injectables, are distributed through the public medical sector free of charge. Public sector sources include womens' consulting centers and womens' consulting offices of polyclinics. Modern contraceptives are also available for a fee at commercial facilities.

All women currently using a modern method were asked where they most recently obtained their method.[3] Table 4.11 shows the percent distribution of all current users of modern contraceptives by the source from which they most recently obtained their method.

The vast majority of women obtain their contraceptives through the public sector (92 percent). Thirty percent of users obtain their method from a hospital, while 26 percent obtained their method from a womens' consulting center. The source of supply of the method depends on the method being used. For example, most women using IUDs obtain them at hospitals (34 percent) or womens' consulting centers (31 percent). Pharmacies supply 58 percent of pill users and 60 percent of condom users. Pill users also use womens' consulting centers or polyclinics to obtain their pills (15 percent), and some obtain their pills from friends or relatives (9 percent). Other sources for condom users include shops (13 percent) and friends or relatives (9 percent). Figure 4.3 summarizes the distribution of current users of modern methods by source of method.

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 do 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 4.12 by background characteristics of respondents.

More than half of women (56 percent) went to their current source of supply because they do not know any other source. Among users who do know more than one place to obtain methods, 39 percent

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

Table 4.11 Source of supply for modern contraceptive methods

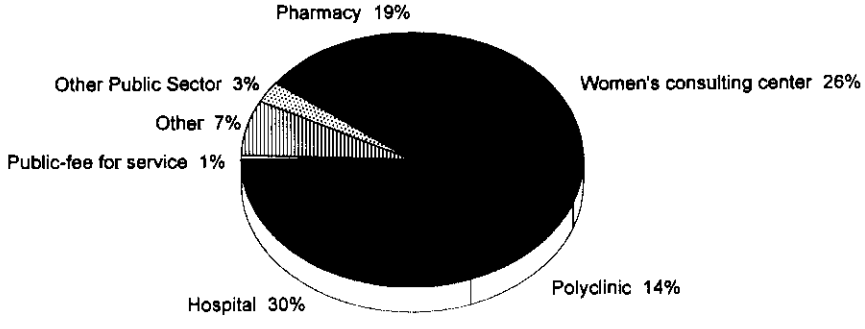
Percent distribution of current users of modern contraceptive methods by most recent source of supply, according to specific methods, Kazakstan 1995

Source of supply	Method				
	Pill	IUD	Condom	Other modern[1]	Total
Public	77.0	96.4	64.6	(98.5)	92.4
Hospital	0.0	34.2	0.0	(75.2)	30.2
Polyclinic	4.5	16.2	0.0	(8.9)	13.9
Women's consulting center	10.1	30.8	0.9	(7.2)	26.3
Pharmacy	58.0	12.1	60.3	(3.3)	18.7
Other	4.4	2.6	3.4	(3.8)	2.8
Public - Fee for service	6.2	0.4	0.3	(0.0)	0.6
Other	16.8	3.2	35.1	(1.5)	6.9
Shop	0.8	0.2	12.6	(0.0)	1.4
Friends/relatives	8.8	2.4	8.5	(1.5)	3.2
Other	7.2	0.7	14.0	(0.0)	2.3
Total	100.0	100.0	100.0	100.0	100.0
Number	55	1,054	128	30	1,266

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

[1] Other modern includes injectables and diaphragm

Figure 4.3
Distribution of Current Contraceptive Users
by Source of Supply



KDHS 1995

went to the place they did because it was closer to home (reason given by 17 percent of all users). Nine percent of users chose their source because it had a more competent and friendly staff. Other reasons were given by 3 percent or less of respondents.

The primary finding of Table 4.12 is the variability by background characteristics of respondents in whether or not users of modern methods know more than one place to obtain methods. Rural women are much more likely than urban women to know only one source of supply (67 and 47 percent, respectively). The greatest differentials are seen across the regions of Kazakstan. In Almaty City, only 23 percent of users know only one source to obtain a method, while in the South, as many as 79 percent of women know only one source. The percent of women who know only one source for modern methods decreases steadily with increasing education. Sixty-eight percent of women with primary/secondary education know of only one place for methods; this percent declines to 53 percent among women with secondary-special education, and then declines further to 44 percent among women with higher education. The majority of Kazak women know only one source of supply (69 percent), while among Russian women, 41 percent know only one source. Women are about equally likely to know a second source of family planning whether they are using contraceptives to space or to limit their childbearing (53 and 57 percent know only one source, respectively).

Table 4.12 Satisfaction with current sources of supply for contraceptive methods

Percent distribution of current users of modern contraceptive methods by satisfaction with most recent source of supply, according to selected background characteristics and reason for using a method, Kazakstan 1995

	Main reason for using current source of supply														
Background characteristic	Know no other source	Closer to home	Closer to work	Trans-port avail-able	Staff compe-tent, friend-ly	Cleaner facility	Offers more privacy	Shorter waiting time	Longer hours of opera-tion	Use other serv-ices there	Low cost, cheaper	Other	Don't know/ Missing	Total	Number of users
Residence															
Urban	47.3	18.0	4.2	2.4	10.6	2.0	2.3	0.4	1.5	4.1	3.1	0.5	0.6	100.0	742
Rural	67.4	15.5	1.4	2.5	6.1	0.2	0.8	0.2	0.4	2.1	1.4	0.2	0.8	100.0	524
Region															
Almaty City	22.8	32.6	4.9	2.2	10.7	0.9	4.5	1.3	1.8	5.4	2.2	1.3	0.9	100.0	99
South	78.8	8.9	0.8	0.3	2.3	2.2	0.0	0.0	0.9	4.0	0.8	0.5	0.3	100.0	367
West	57.5	16.3	3.9	5.0	5.1	0.0	2.0	0.8	1.5	3.2	0.0	0.8	0.0	100.0	137
Central	56.4	16.7	1.2	4.0	9.5	0.0	0.7	1.2	1.3	2.8	1.2	0.3	1.5	100.0	133
North and East	45.0	19.9	4.5	2.9	13.6	1.3	2.5	0.0	0.8	2.5	4.5	0.0	0.8	100.0	531
Education															
Primary/Secondary	68.2	11.6	0.6	2.5	7.0	1.8	0.5	0.3	0.7	4.2	0.5	0.5	0.7	100.0	365
Secondary-special	53.0	18.1	4.9	2.1	8.8	1.0	2.1	0.1	1.1	2.7	3.0	0.1	0.3	100.0	655
Higher	43.6	22.1	1.9	3.3	11.1	0.9	2.3	1.0	1.4	3.4	3.6	0.8	1.6	100.0	245
Ethnicity															
Kazak	69.4	12.2	1.9	1.6	5.0	0.9	1.1	0.3	0.8	3.3	1.1	0.4	0.3	100.0	531
Russian	41.0	20.5	4.4	3.5	12.6	1.4	2.3	0.4	1.1	3.9	3.6	0.4	1.4	100.0	488
Other	54.7	20.3	2.9	2.0	9.2	1.6	1.6	0.2	1.5	1.9	2.9	0.2	0.0	100.0	247
Reason for using															
To space	52.8	20.7	1.6	2.5	6.9	1.6	2.1	0.4	0.5	3.5	2.9	0.6	0.7	100.0	455
To limit	57.2	14.9	3.9	2.4	9.8	1.0	1.5	0.3	1.4	3.1	2.2	0.2	0.6	100.0	811
Total	55.6	17.0	3.1	2.4	8.7	1.2	1.7	0.3	1.0	3.3	2.4	0.4	0.6	100.0	1,266

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 KDHS asked nonusers of contraception whether they intend to use a method of contraception at some time in the future, and more specifically, whether they intend to do so within the next 12 months. Table 4.13 presents the results for currently married women according to their past experience with contraception and by the number of living children they have.

Overall, 48 percent of currently married nonusers do intend to use a method of family planning at some time in the future; 28 percent intend to use within the next 12 months, 17 percent at some more distant time in the future, and the remaining 3 percent are unsure as to when they would use a method. The majority (60 percent) of nonusers who intend to use a method at some time in the future are women who have used a method at some time in the past.

Nonusers who intend to use a method later in the future tend to be women with fewer children. While most nonusers with no children say they intend to use a method at some time beyond the coming 12 months (46 percent), most nonusers with children who intend to use a method say they intend to do so within the next 12 months.

Table 4.13 Future use of contraception

Percent distribution of currently married women who are not using a contraceptive method by past experience with contraception and intention to use in the future, according to number of living children, Kazakstan 1995

Past experience with contraception and future intentions	Number of living children[1]					Total
	0	1	2	3	4+	
Never used contraception						
Intend to use in next 12 months	8.8	14.0	10.9	10.2	9.1	11.1
Intend to use later	25.7	7.6	4.3	2.2	1.2	6.6
Unsure as to timing	0.4	2.1	1.3	1.8	0.5	1.3
Unsure as to intention	4.8	2.6	5.5	4.4	1.3	3.7
Do not intend to use	25.1	15.3	10.4	13.3	32.4	17.7
Previously used contraception						
Intend to use in next 12 months	1.9	17.4	22.8	19.6	13.3	17.0
Intend to use later	20.6	14.2	10.6	4.4	3.6	10.5
Unsure as to timing	3.4	0.4	1.3	1.6	1.5	1.4
Unsure as to intention	1.0	2.1	3.1	5.2	3.6	3.0
Do not intend to use	8.1	24.2	29.8	37.3	33.6	27.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
All currently married nonusers						
Intend to use in next 12 months	10.7	31.4	33.7	29.9	22.4	28.0
Intend to use later	46.3	21.8	14.9	6.6	4.8	17.1
Unsure as to timing	3.8	2.5	2.6	3.4	1.9	2.7
Unsure as to intention	5.9	4.7	8.6	9.6	4.9	6.7
Do not intend to use	33.2	39.5	40.2	50.6	66.0	45.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	109	268	327	128	193	1,025

[1] Includes current pregnancy

Forty-five percent of all currently married nonusers of contraception do not intend to use a method of family planning at any time in the future. The percent who do not intend to use increases as number of children increases; 33 percent of nonusers with no children say they do not intend to use, while 66 percent among nonusers with four or more children say they do not intend to use.

The KDHS results (data not shown) reveal that 43 percent of all nonusers of contraception[4] 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, 47 percent of the nonusers did not visit a health facility within the 12 months prior to the survey; this translates to 90 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 KDHS asked all nonusers who do not intend to use a method of family planning at any time in the future the reason they do not intend to use in the future. These results are presented for all women in Table 4.14, and for women below and above age 30. The most common reason given for not using contraception is opposition to family planning on the part of the respondent (35 percent); this was the most common reason for both younger (43 percent) and older (34 percent) nonusers. The second most common reason given by younger women was wanting more children (19 percent) and by older women being menopausal (24 percent).

Table 4.14 Reasons for not using contraception

Percent distribution of women who are not currently using a contraceptive method and who do not intend to use in the future, by main reason for not intending to use in the future, according to age, Kazakstan 1995

Reason for not using contraception	Age <30	Age 30-49	Total
Infrequent sex	2.4	8.1	7.5
Menopausal/hysterectomy	1.9	23.6	21.4
Subfecund/infecund	7.2	8.8	8.6
Want children	19.4	6.5	7.8
Gynecologic disease	2.4	6.6	6.2
Respondent opposed	42.5	33.7	34.6
Husband opposed	0.0	0.3	0.2
Religion	8.3	1.3	2.0
Knows no method	0.0	1.1	1.0
Knows no source	0.0	0.1	0.1
Health concerns	11.2	5.9	6.4
Side effects	0.0	0.5	0.4
Inconvenient	2.4	0.3	0.5
Interferes with body	0.0	0.5	0.4
Other	1.2	2.4	2.3
Don't know	1.2	0.4	0.5
Total	100.0	100.0	100.0
Number of women	47	418	466

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 4.15 according to whether the nonusers intend to use within the next 12 months or later.

Three-quarters of nonusers who intend to use (79 percent) report the IUD to be the method they would use. The pill is the second most commonly reported method (8 percent). Neither the rank order nor the magnitude of reporting varies greatly between nonusers who intend to use soon (within the next 12 months) and nonusers who intend to use at some later date. Other methods were mentioned by fewer than 4 percent of nonusers.

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

Table 4.15 Preferred method of contraception for future use

Percent distribution of currently married women who are not using a contraceptive method but who intend to use in the future by preferred method, according to whether they intend to use in the next 12 months or later, Kazakstan 1995

Preferred method of contraception	Intend to use: In next 12 months	Intend to use: After 12 months	Intend to use: Unsure as to timing	Total
Pill	5.8	9.9	(10.3)	7.5
IUD	81.4	75.8	(69.1)	78.7
Injectables	1.3	0.0	(1.6)	0.8
Diaphragm/Foam/Jelly	0.0	0.6	(1.6)	0.3
Condom	3.8	3.0	(0.0)	3.3
Periodic abstinence	2.8	3.8	(0.0)	3.0
Withdrawal	0.4	0.0	(0.0)	0.2
Folk method	0.2	0.9	(1.6)	0.5
Douche	0.2	0.0	(0.0)	0.1
Missing	4.3	6.0	(15.8)	5.5
Total	100.0	100.0	100.0	100.0
Number of women	288	176	27	491

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

4.10 Exposure to Family Planning Messages in the Electronic Media

The mass media provide an opportunity to communicate family planning information to a broad spectrum of the population. Approximately half of the households in Kazakstan own a radio and nearly all (90 percent) own a television (see Table 2.9). All KDHS respondents were asked whether they had heard a family planning message on the radio or television in the few months prior to the interview. Results are presented in Table 4.16 by background characteristics of respondents.

While 9 percent of respondents have recently heard or seen a family planning message on both radio and television, television is by far the most common source—43 percent of all respondents have seen a television message and 10 percent have heard a radio message. One-half of urban dwellers has seen a television message and 34 percent of rural dwellers have done so. As it was presented in Chapter 2.3.4, television is a more ready source to reach both urban and rural dwellers such that 94 percent of all respondents report watching television at least once a week. Ownership of radio and television in urban households is 62 and 93 percent, respectively, while only 37 percent of rural households own a radio and 86 percent own a television. Nearly everyone who hears a radio message has also seen a television message, and only 1 percent of respondents has heard only a radio message.

Regional variation in exposure to television messages is greater than the urban/rural differential. Nearly three-quarters (71 percent) of women in Almaty City has recently seen a television family planning message, while only one-third (31 percent) of women in the South have seen such a message. Women in Almaty City are also the most likely to have both seen a television message and heard a radio message (25 percent). Nearly one-half of respondents in the other regions of Kazakstan has recently seen a television 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 increases steadily with increasing education. Thirty-

Table 4.16 Heard about family planning on radio and television

Percent distribution of women by whether they have heard a radio or television message about family planning in the last few months prior to the interview, according to selected background characteristics, Kazakstan 1995

Background characteristic	Heard family planning message on radio or television: Heard on neither	Radio only	Tele-vision only	Heard on both	Total	Number of women
Residence						
Urban	49.9	0.9	37.6	11.7	100.0	2,133
Rural	64.3	1.2	29.2	5.2	100.0	1,638
Region						
Almaty City	26.0	2.6	46.0	25.4	100.0	271
South	68.7	0.8	24.7	5.8	100.0	1,206
West	50.0	0.1	40.8	9.1	100.0	477
Central	53.4	1.3	39.4	6.0	100.0	358
North and East	54.1	1.1	35.8	9.0	100.0	1,458
Education						
Primary/Secondary	63.5	0.9	29.2	6.3	100.0	1,376
Secondary-special	54.9	0.9	34.9	9.3	100.0	1,721
Higher	44.0	1.5	41.4	13.1	100.0	670
Ethnicity						
Kazak	63.6	0.9	29.0	6.5	100.0	1,696
Russian	46.4	1.4	40.6	11.7	100.0	1,309
Other	56.4	0.7	33.6	9.3	100.0	766
Total	56.2	1.0	33.9	8.9	100.0	3,771

Note: Total includes four women with no education. Figures may not add to 100.0 due to rounding.

six percent of respondents with primary or secondary education has recently seen a television message, while 44 and 55 percent of women with secondary-special and higher education has seen such a message. Russian women are more likely than Kazak women to have recently seen a television message (52 percent and 36 percent, respectively).

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

The KDHS 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 4.17 by background characteristics of respondents.

Most women (81 percent) find it acceptable for family planning messages to be broadcast over the radio and television. Virtually all respondents who find radio messages acceptable also find television messages acceptable (data not shown). The youngest women (age 15-19) are less likely than older women to say they find broadcast messages acceptable (69 percent) because they are more likely to report being unsure (17 percent). Women in rural areas, women with primary or secondary education, and Kazak women all have approval levels that are slightly lower than their counterparts, but the overall levels of approval are high (approximately three-quarters of women in these categories approve). Overall, 12 percent of women feel that broadcasting of family planning messages is not acceptable. This level of nonacceptance is generally maintained across background characteristics of respondents.

Table 4.17 Acceptability of media messages on family planning

Percent distribution of women by acceptability of messages about family planning on the radio or television, according to selected background characteristics, Kazakstan 1995

Background characteristic	Acceptability of family planning messages on radio or television: Acceptable	Not acceptable	Unsure	Total	Number of women
Age					
15-19	68.8	14.6	16.6	100.0	669
20-24	82.8	9.2	8.0	100.0	567
25-29	86.1	10.1	3.8	100.0	521
30-34	87.4	8.2	4.4	100.0	557
35-39	83.6	13.0	3.3	100.0	564
40-44	82.6	13.1	4.3	100.0	537
45-49	77.3	17.1	5.6	100.0	355
Residence					
Urban	85.6	9.6	4.8	100.0	2,133
Rural	75.1	15.1	9.8	100.0	1,638
Region					
Almaty City	84.9	12.2	2.9	100.0	271
South	77.4	13.8	8.8	100.0	1,206
West	80.5	7.2	12.3	100.0	477
Central	79.4	13.0	7.7	100.0	358
North and East	83.9	11.8	4.3	100.0	1,458
Education					
Primary/Secondary	72.8	15.1	12.1	100.0	1,376
Secondary-special	85.2	10.1	4.7	100.0	1,721
Higher	87.4	10.4	2.1	100.0	670
Ethnicity					
Kazak	77.7	12.1	10.2	100.0	1,696
Russian	86.7	9.9	3.4	100.0	1,309
Other	78.7	15.4	5.8	100.0	766
Total	81.0	12.0	7.0	100.0	3,771

Note: Total includes four women with no education. Figures may not add to 100.0 due to rounding.

4.12 Exposure to Family Planning Messages in Print Media

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

About one-half (48 percent) of all respondents have recently seen information about family planning in the print media. Levels of exposure through print are generally on par with levels of exposure through television. Fifty-six percent of urban women and 37 percent of rural women have recently seen a family planning message in print. Three-quarters of women in Almaty City have recently read a printed family

Table 4.18 Family planning messages in print

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, Kazakstan 1995

Background characteristic	Type of print media containing family planning message				Number of women
	No source	Newspaper/ magazine	Poster	Leaflet/ brochure	
Residence					
Urban	44.5	49.1	13.1	22.9	2,133
Rural	62.6	32.5	5.8	13.6	1,638
Region					
Almaty City	24.7	66.2	28.5	35.6	271
South	63.9	32.5	5.8	12.2	1,206
West	37.8	59.1	16.5	19.9	477
Central	44.7	46.6	10.9	31.7	358
North and East	54.7	38.4	7.5	17.7	1,458
Education					
Primary/Secondary	64.6	32.2	7.1	10.6	1,376
Secondary-special	49.3	43.4	9.8	21.6	1,721
Higher	34.9	58.1	16.2	28.9	670
Ethnicity					
Kazak	56.4	38.8	8.7	15.6	1,696
Russian	47.4	45.8	11.5	22.0	1,309
Other	51.9	42.0	10.0	20.8	766
Total	52.4	41.9	9.9	18.9	3,771

Note: Total includes four women with no education.

planning message, while only one-third (36 percent) of women in the South Region have read such a message.

While printed messages can be aimed at readers of all educational levels, the likelihood that a respondent has in fact recently seen or read a message increases steadily with increasing education. Thirty-five percent of respondents with primary or secondary education have recently read a message, while 51 and 65 percent of women with secondary-special and higher education have seen such a message. In fact, women with secondary-special and higher education are more likely to have read printed information than to have seen a television message. Russian women are more likely than Kazak women to have recently seen printed information on family planning (53 percent and 44 percent, respectively).

Newspapers and magazines are the most commonly printed source in which family planning messages are seen (42 percent), although respondents also get messages from leaflets and brochures (19 percent) and posters (10 percent). Each of the print media presented in the table (newspapers/magazines, posters, leaflets/brochures) replicate the same patterns by background characteristics of respondents as the overall patterns for all print material combined.

4.13 Attitudes of Couples toward Family Planning

Married women were asked how often they had discussed contraception with their husbands or partners in the previous year. Data are presented in Table 4.19 for currently married women by age.

Whether or not couples speak with each other about family planning greatly depends on the age of the woman. Overall, about one-half of married women (47 percent) have not discussed family planning with their husbands at all in the previous year, one-third have discussed the topic once or twice, and one-fifth have discussed the topic more often. However, the percent of married women who have discussed family planning at least once in the previous year increases from 19 percent among 45-49 year-olds to 79 percent of 15-19 year-olds. One-third of women under the age of 25 have discussed family planning with their husbands three or more times.

Table 4.19 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 their husband in the year preceding the survey, according to current age, Kazakstan 1995

Age	Number of times family planning discussed			Total	Number of women
	Never	Once or twice	More often		
15-19	21.4	44.1	34.5	100.0	77
20-24	23.2	43.3	33.5	100.0	346
25-29	29.7	42.9	27.4	100.0	421
30-34	44.3	34.9	20.8	100.0	452
35-39	53.5	30.3	16.2	100.0	476
40-44	64.6	26.7	8.6	100.0	434
45-49	80.8	14.0	5.2	100.0	264
Total	47.4	33.2	19.4	100.0	2,471

Currently married women were asked what they perceive to be their husbands' attitude toward contraception in terms of their approval or disapproval. Table 4.20 presents the results of the wives' perceptions of their husbands' attitude by background characteristics of respondents.

Perhaps the most interesting finding in Table 4.20 is the fact that women report a lower approval level for their husbands than for themselves across every single background characteristic of respondents. Overall, 88 percent of women report that they approve of contraception, but only 70 percent report that their husbands approve; this translates to 66 percent of all married couples in which both the husband and wife approve of contraception. If there exists a difference of opinion, it is usually that the woman reports she approves, and that her husband disapproves (although not exclusively). Only 4 percent of women report that both she and her husband disapprove of family planning.

The percent of couples in which both husband and wife approve of family planning has a pattern by background characteristics which generally mimics the pattern observed in the percent of women currently using family planning.

Table 4.20 Wives' perceptions of their husbands' attitude 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, according to selected background characteristics, Kazakstan 1995

Background characteristic	Wife approves of couples using family planning			Wife disapproves of couples using family planning			Wife unsure	Total	Husband approves[1]	Wife approves	Number of women
	Both approve	Husband disapproves	Husband's attitude unknown	Both disapprove	Husband approves	Husband's attitude unknown					
Age											
15-19	53.2	22.1	12.7	2.5	2.0	0.0	7.5	100.0	57.5	88.0	77
20-24	72.3	12.7	7.1	1.2	1.3	1.8	3.6	100.0	75.0	92.1	346
25-29	70.9	12.8	5.9	3.2	2.6	0.7	4.0	100.0	73.7	89.5	421
30-34	71.0	8.3	9.4	4.4	2.6	0.8	3.5	100.0	75.6	88.6	452
35-39	64.8	16.0	7.5	4.9	2.3	0.9	3.6	100.0	68.3	88.3	476
40-44	67.4	13.5	7.8	4.1	3.4	1.1	2.6	100.0	71.8	88.8	434
45-49	45.4	18.5	13.0	10.0	2.0	6.6	4.6	100.0	49.3	76.9	264
Residence											
Urban	68.6	14.1	7.1	3.4	2.7	1.1	3.0	100.0	72.5	89.8	1,381
Rural	62.8	12.9	9.9	5.5	2.1	2.2	4.6	100.0	66.3	85.6	1,090
Region											
Almaty City	73.2	9.3	7.4	4.1	2.7	1.1	2.2	100.0	77.0	89.9	161
South	58.2	14.0	8.4	6.3	3.4	2.6	7.1	100.0	64.3	80.6	796
West	65.7	9.8	17.5	2.1	0.6	1.2	3.2	100.0	66.4	92.9	296
Central	72.5	11.6	5.9	4.3	2.3	2.0	1.4	100.0	75.6	90.0	231
North and East	69.8	15.5	6.3	3.4	2.2	0.9	1.9	100.0	72.6	91.6	987
Education											
Primary/Secondary	57.1	14.5	10.3	7.1	1.9	2.5	6.5	100.0	61.1	81.9	779
Secondary-special	68.8	13.9	8.0	3.3	2.6	1.2	2.2	100.0	72.1	90.7	1,244
Higher	74.0	11.2	5.8	2.3	2.8	1.0	3.0	100.0	78.2	91.0	448
Ethnicity											
Kazak	61.6	13.0	9.8	5.3	2.3	2.7	5.2	100.0	65.5	84.5	1,047
Russian	71.0	13.9	7.4	2.9	2.5	1.0	1.3	100.0	74.2	92.3	916
Other	66.2	14.1	6.9	4.9	2.7	0.3	4.9	100.0	70.5	87.2	508
Total	66.0	13.6	8.3	4.3	2.4	1.6	3.7	100.0	69.7	88.0	2,471

[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, Nailya M. Karsybekova, and Kia I. Weinstein

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 pronatalist 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 abortions can adversely affect a woman's health, reduce her chances for further childbearing and contribute to maternal and perinatal mortality. In Kazakstan, approximately 20 percent of maternal deaths are associated with this practice (Ministry of Health, 1996). In an effort to curtail this practice, the Ministry of Health of Kazakstan is committed to making modern, safe, and effective contraceptive methods readily available to the population.

International experience with the collection of abortion data in population surveys has been relatively unsuccessful due to respondent reluctance to report events which, in many societies, are associated with social stigmas. In Kazakstan, social stigmas are not associated with the practice of abortion, and questions on this topic have been included, with apparent success, in some surveys (Foreit and McCombie, 1995). Accordingly, questions on abortion were developed, pretested, and included in the final questionnaires for the 1995 KDHS.

Information about induced abortion was collected in the reproductive section of the Woman's Questionnaire (Appendix E). The section starts by asking respondents separate questions about the number of live births, induced abortions, miscarriages, and stillbirths they have had. When asked about the number of induced abortions, respondents were told to include pregnancies terminated by vacuum aspiration (i.e., mini-abortions). After obtaining this aggregate data, an event-by-event pregnancy history was collected. The date of termination (month and year) and type of outcome were recorded for each reported pregnancy.[1] Information was first collected about the most recent (or last) pregnancy and then about the next-to-last, etc.

5.1 Pregnancy Outcomes

Table 5.1 shows the percent distribution by outcome of pregnancies terminating in the three years preceding the survey from mid-1992 to mid-1995. For all of Kazakstan, 54 percent of pregnancies terminate in a live birth and 46 percent in fetal wastage (i.e., an induced abortion, miscarriage, or stillbirth). Induced abortion is the most commonly reported type of fetal wastage and accounts for 38 percent of all pregnancy outcomes.

[1] A number of procedures were employed to obtain complete reporting of events in the pregnancy history. First, the event history was recorded in reverse chronological order (i.e., information was first collected about the last event, and then about the next-to-last, and so forth). It was felt that this procedure would result in more complete reporting of events for the period immediately prior to the survey than a procedure which proceeded in chronological order. Second, at the end of the section, interviewers were required to check that there was agreement between the aggregate data collected at the outset of the section and the number of events reported in the pregnancy history. Finally, interviewers were required to probe pregnancy intervals of four or more years in an effort to detect unreported 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, Kazakstan 1995

Background characteristics	Pregnancy outcome				Total	Number of pregnancies
	Live births	Induced abortion	Mis-carriage	Still-births		
Residence						
Urban	46.0	46.7	6.7	0.6	100.0	747
Rural	62.0	28.8	8.1	1.1	100.0	753
Region						
Almaty City	29.1	59.0	11.2	0.7	100.0	123
South	73.2	18.1	7.4	1.3	100.0	510
West	66.5	24.2	9.2	0.0	100.0	160
Central	57.2	33.4	8.2	1.3	100.0	148
North and East	37.5	55.9	5.8	0.7	100.0	559
Education						
Primary/Secondary	60.8	31.2	6.5	1.4	100.0	482
Secondary-special	51.1	40.2	7.9	0.8	100.0	754
Higher	49.7	42.5	7.6	0.2	100.0	264
Ethnicity						
Kazak	69.2	23.4	6.5	0.8	100.0	704
Russian	35.1	57.8	6.5	0.5	100.0	497
Other	49.5	37.8	10.9	1.7	100.0	298
Total	54.0	37.7	7.4	0.9	100.0	1,499

Table 5.1 also shows the distribution of terminated pregnancies by background characteristics of respondents. Women in all groups use induced abortion as a means of fertility control but the extent to which they do so varies substantially. For example, urban women abort 47 percent of their pregnancies while rural women abort 29 percent.

Recourse to induced abortion also varies substantially by region. As expected, levels of abortion and fertility are inversely correlated. In the relatively low fertility areas of Almaty City and the North and East Region, women abort more than half of their pregnancies (59 and 56 percent, respectively). In the West and Central Regions where fertility levels are intermediate, women abort fewer pregnancies (24 and 33 percent, respectively). Finally, in the high-fertility South Region, women abort the lowest percentage of pregnancies (18 percent).

Education and ethnicity are also associated with pregnancy outcome. For example, women of Russian ethnicity are twice as likely to abort a pregnancy (58 percent) as Kazak women (23 percent).

5.2 Lifetime Experience with Induced Abortion

Table 5.2 presents the percentage of respondents who have had an abortion and the distribution of these women by the number of abortions by background characteristics. It should be noted that these statistics pertain to all women age 15-49 and, except for the statistics by age and number of live births, are not controlled for the stage of the family building process.

Table 5.2 Lifetime experience with induced abortion

Percentage of women who have had at least one induced abortion and, among these women, the percent distribution by the number of induced abortions and the mean number of induced abortions according to selected background characteristics, Kazakstan 1995

Background characteristics	Percentage of women who had an induced abortion	Number of induced abortions among women who have had an induced abortion					Mean	Number of women
		1	2-3	4-5	6+	Total		
Age								
<20	0.9	*	*	*	*	100.0	*	669
20-24	20.6	63.6	30.1	6.2	0.0	100.0	1.6	657
25-34	46.0	37.1	43.2	14.6	5.1	100.0	2.3	989
35+	65.9	21.7	43.8	20.5	14.1	100.0	3.6	1,456
No. of live births								
None	4.1	74.6	20.1	3.2	2.2	100.0	1.5	1,103
1	45.0	39.6	39.4	15.7	5.3	100.0	2.4	713
2-3	65.8	24.1	46.0	17.9	11.9	100.0	3.3	1,488
4-5	48.1	31.4	35.1	21.1	12.4	100.0	3.1	345
6+	36.7	44.1	29.6	20.0	6.3	100.0	2.7	122
Residence								
Urban	50.0	27.1	44.1	17.3	11.5	100.0	3.2	2,133
Rural	29.9	36.8	38.2	17.8	7.2	100.0	2.7	1,638
Region								
Almaty City	54.5	28.1	39.1	18.2	14.6	100.0	3.4	271
South	24.5	39.4	41.5	14.0	5.2	100.0	2.3	1,206
West	30.7	37.7	44.3	13.0	5.0	100.0	2.4	477
Central	43.7	30.7	39.2	17.5	12.7	100.0	3.1	358
North and East	55.6	25.7	43.4	19.4	11.6	100.0	3.3	1,458
Education								
Primary/Secondary	29.3	32.2	35.6	20.1	12.1	100.0	3.3	1,380
Secondary-special	49.3	27.4	45.1	17.1	10.3	100.0	3.0	1,721
Higher	45.4	35.0	43.2	14.7	7.1	100.0	2.5	670
Ethnicity								
Kazak	25.0	43.5	40.1	13.9	2.5	100.0	2.2	1,696
Russian	60.7	24.6	42.4	19.7	13.3	100.0	3.4	1,309
Other	44.1	26.3	44.7	16.6	12.4	100.0	3.2	766
Marital status								
Never married	2.1	*	*	*	*	100.0	*	885
Currently married, living together	54.1	29.6	42.9	17.5	10.0	100.0	3.0	2,507
Ever married	48.3	29.6	39.4	18.8	12.2	100.0	3.2	379
Total	41.3	30.1	42.3	17.4	10.2	100.0	3.0	3,771

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

Overall, 41 percent of women in Kazakstan have had at least one induced abortion. As expected, the percentage of women who have had an induced abortion increases rapidly with age, from 21 percent in the age group 20-24 to 66 percent in the age group 35 and over. Differences are also large by residence such that 50 percent of urban women report having had an induced abortion as compared to 30 percent of rural women. Regional differences with induced abortion are even greater; 56 percent of women in the North and East Region report experience with abortion as compared to 25 percent in the South Region. Only one-quarter of Kazak women have had an induced abortion compared to 61 percent of Russian women.

Table 5.2 also presents information on repeat use of induced abortion. Overall, among the 41 percent of women having experience with induced abortion, 70 percent have had more than one abortion. Among

women age 35 years or more who have had an induced abortion, 78 percent have had multiple abortions. Among these women, the mean number of abortions is 3.6 and 14 percent have had six or more abortions. It is clear that repeat use of induced abortion is common in Kazakstan.

5.3 Rates of Induced Abortion

In this section, rates of induced abortion are shown for the three-year period preceding the KDHS (from mid-1992 to mid-1995). Three types of rates are presented: age-specific rates, the total abortion rate (TAR), and the general abortion rate (GAR). The age-specific rates are shown per 1,000 women. The TAR is a convenient summary measure of the age-specific rates and is expressed on a per woman basis. The TAR is interpreted as the number of abortions a woman will have in her lifetime if she experiences the current age-specific abortion rates during her reproductive years.

As shown in Table 5.3 for all of Kazakstan, the age-specific rates of induced abortion increase for the younger age groups of women, peak among women 25-29 (104 per 1,000 women) and decline in the older age groups. The pattern is such that the age-specific rates of abortion are less than the fertility rates for younger women (i.e., through age group 25-29) but greater than the fertility rates for older women (Figure 5.1).

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 residence and ethnicity, Kazakstan 1995

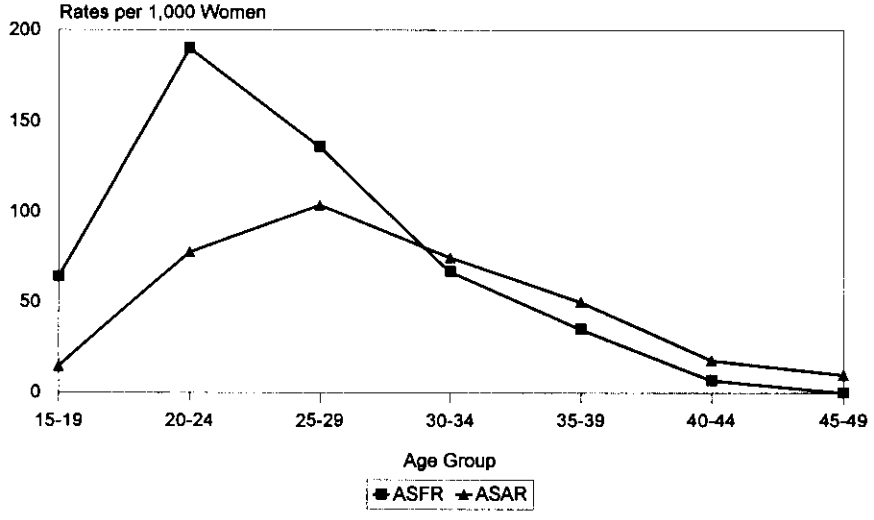
	Residence		Ethnicity			
Age	Urban	Rural	Kazak	Russian	Other	Total[1]
15-19	20	10	0	35	21	15
20-24	86	70	31	171	77	78
25-29	123	82	86	147	78	104
30-34	81	67	53	78	117	75
35-39	53	46	36	68	44	50
40-44	19	15	10	32	2	18
45-49	12	7	5	18	(4)	10
TAR 15-49	1.97	1.48	1.11	2.74	(1.72)	1.75
TAR 15-44	1.91	1.45	1.08	2.66	(1.69)	1.70
GAR	62	50	36	84	57	57

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
[1] Includes Kazak, Russian, and other ethnic groups
Note: Rates in parentheses indicate tht one or more of the component age-specific rates is based on fewer than 250 woman-years of exposure.

The age-specific rates imply a lifetime total abortion rate (TAR) of 1.8 abortions per woman. It is interesting to compare this TAR with an estimate for the Russian Federation based on data pertaining to the same time period (i.e., 1994). The estimate for Kazakstan is at the high end of the estimated range (between 1.0 and 2.0 abortions per woman) for the Russian Federation (Mroz and Popkin, 1995).

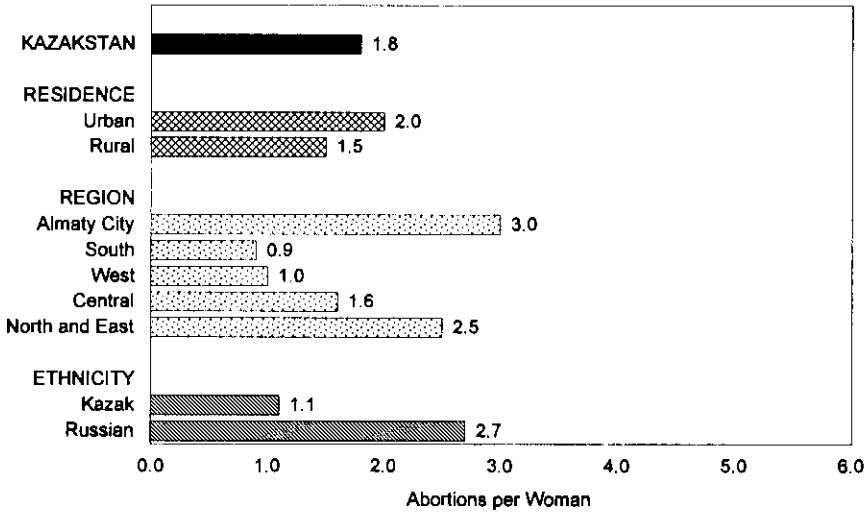
Table 5.3 also shows induced abortion rates by residence and ethnicity. Age-specific abortion rates in the urban areas exceed the rural rates. At every age, the urban rates are at least 15 percent greater than the rural rates and frequently they are 30 to 50 percent greater. The urban TAR (2.0 abortions per woman) exceeds the rural TAR (1.5) by 33 percent (Figure 5.2). The differentials by ethnicity are even greater than

Figure 5.1
Age-specific Rates of Fertility (ASFR) and Induced Abortion (ASAR)



KDHS 1995

Figure 5.2
Total Induced Abortion Rate by Background Characteristics



KDHS 1995

by residence; Russian women frequently have age-specific rates two or three times greater than Kazak women. The TAR for Russian women (2.7 abortions per woman) exceeds the TAR for Kazak women (1.1) by about 150 percent.

5.4 Time Trends in Induced Abortion

An indication of time trends in induced abortion can be obtained by comparing values of the TAR for the three-year period preceding the survey with the mean number of abortions reported by women age 40-49.[2] Table 5.4 indicates that, for all of Kazakstan, the current TAR (1.8 abortions per woman) is substantially less than the number of abortions reported by women age 40-49 (2.6). Lesser values of the TAR compared to the number of abortions reported by older women are evident for all population groups. This implies that a movement away from induced abortion as a means of fertility control has occurred at the national level and among all segments of the population.

The KDHS data allow a more direct assessment of time trends of induced abortion. Table 5.5 shows age-specific rates of induced abortion for successive five-year time periods prior to the survey.[3]

Except for women age 15-19, age-specific rates have declined in every age group. Declines in abortion rates are as large as 50 percent over the past 20 years among women ranging in age from 20-39. Figure 5.3 shows a graphical representation of these declines.

The age-specific rates can be summarized in terms of the TAR restricted to women age 15-44. As seen in Table 5.5, between the time periods 5-9 and 0-4 years before the survey, the TAR declined from 2.0 to 1.7 abortions per woman—a decline of approximately 15 percent over a five-year period.

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, Kazakstan 1995

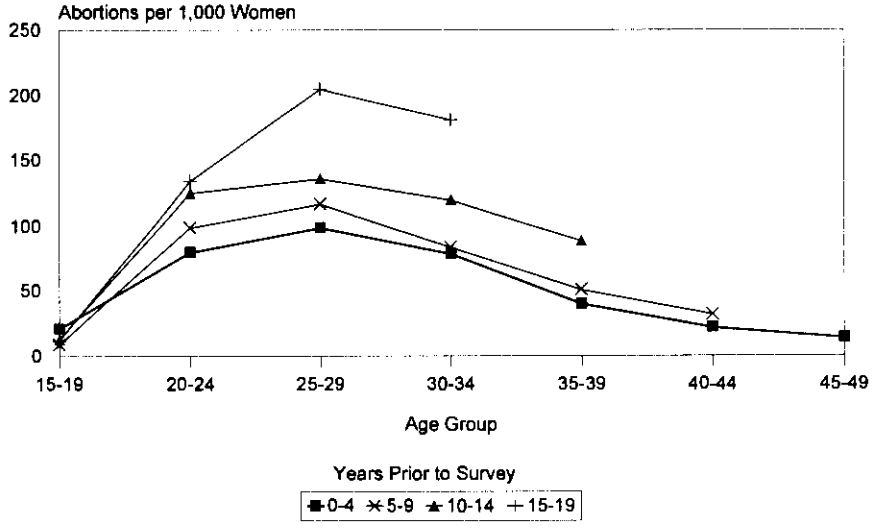
Background characteristic	Total induced abortion rate[1]	Mean number of abortions 40-49
Residence		
Urban	1.97	2.91
Rural	1.48	1.98
Region		
Almaty City	(3.04)	3.57
South	(0.89)	1.26
West	(1.03)	1.48
Central	(1.57)	2.96
North and East	(2.54)	3.45
Education		
Primary/Secondary	1.61	2.47
Secondary-special	1.89	2.85
Higher	(1.62)	2.16
Ethnicity		
Kazak	1.11	1.24
Russian	2.74	3.67
Other	(1.72)	2.76
Total	1.75	2.59

Note: Rates in parentheses indicate that one or more of the component age-specific rates is based on fewer than 250 women-years of exposure.
[1] Women age 15-49

[2] The TAR discussed is a summary measure of current abortion rates, while the mean represents the actual, cumulative experience of older women.

[3] A limitation of survey methodology for the investigation of time trends is evident in Table 5.5. In the KDHS survey, women 50 years of age and older were not interviewed. Thus, when calculating age-specific rates for earlier time periods, data are not available for older age groups of women. For example, rates cannot be calculated for women age 40-44 for the period 10-14 years before the survey, because those women were over age 50 at the time of the survey and were not interviewed.

Figure 5.3
Age-specific Abortion Rates by Time Period



KDHS 1995

Table 5.5 Trends in age-specific induced abortion

Age-specific induced abortion rates for five-year periods preceding the survey, by woman's age at the time of birth, Kazakstan 1995

	Number of years preceding the survey			
Age	0-4	5-9	10-14	15-19
15-19	21	9	13	12
20-24	80	99	125	134
25-29	99	117	136	205
30-34	79	84	120	[181]
35-39	40	51	[89]	-
40-44	22	[32]	-	-
45-49	[14]	-	-	-
TAR 15-44	1.71	1.96	-	-
GAR	58	71	-	-

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

5.5 Abortion Rates from the Ministry of Health

The Ministry of Health (MOH) has for many years collected abortion data through a registration system which operates in all of its facilities. The data from the MOH have recently been published in a compendium of health statistics for the republics of Central Asia (Church and Koutanev, 1995). The data on induced abortion are shown in terms of annual rates per 1,000 women of childbearing age. Comparison of the MOH data with that of the KDHS will be useful as a means of evaluating the reliability of the two data sets.

Table 5.6 Comparison of abortion rates

General abortion rates (induced abortions per 1,000 women of childbearing age) by time period and percent decline, Ministry of Health and KDHS, 1986-95

Source	Time period		Percent decline
	1986-90	1993-95	
KDHS	71	57	20
Ministry of Health	75	62	17

Sources: Church and Koutanev (1995) and Ministry of Health (1996)

Note: Rates for the KDHS are displaced six months from the dates shown. The KDHS rate for 1993-95 is calculated for the three years preceding the survey, from mid-1992 to mid-1995 (see Table 5.3). Similarly, the rate for 1986-90 is for mid-1985 to mid-1990 (see Table 5.5).

Table 5.6 shows rates of abortion per 1,000 women of childbearing age for the time periods 1986-90 and 1993-95. For both time periods, the MOH rates are somewhat greater than the KDHS rates so that the MOH data appear to be more complete. Nevertheless, given the poor quality typically associated with abortion data, the agreement between the two data sets is remarkably good. Both data sets indicate a decline of the same magnitude in induced abortion over the five-year period, with a 20 percent decline for the KDHS rates and a 17 percent decline for the MOH rates.

5.6 Impact of Contraception on Abortion

The relationship between the availability and use of reliable contraceptive methods and reliance on abortion as a fertility control measure is of considerable interest to Kazakstan and to the family planning community throughout the world. Intuitively, an inverse relationship would be expected but empirical confirmation of such a relationship is scarce.

Data on Kazakstan offer an opportunity to observe the impact which increases in contraceptive use can have on induced abortion. For the period from 1988 to 1995, there are credible annual statistics from the MOH on contraceptive prevalence (pill and IUD users per 100 women age 15-49) and induced abortion (abortions per 1,000 women age 15-49).[4]

[4] Very similar levels and trends in abortion are found in the data from the KDHS and the MOH, which tends to substantiate the accuracy of both sets of data. Since 1988, the MOH has collected annual statistics on active pill and IUD users at public facilities. The KDHS prevalence rate for pill and IUD users for mid-1995 is identical to the MOH rate for 1993 (both were 29 percent of women of childbearing age), which supports the reliability of the MOH statistics.

Table 5.7 shows average values of the annual statistics for the periods 1988-89 and 1993-95. Over the interval of about five years, the pill and IUD prevalence rate increased by 32 percent and the abortion rate declined by 15 percent. This is clear and convincing evidence that contraception has been substituted for abortion in recent years in Kazakstan.

Table 5.7 Time trends in contraception and abortion

Contraceptive use rate (pill and IUD) and induced abortion rates, by time period, Ministry of Health, 1988-95

Rate	Time period 1988-89	Time period 1993-95	Percent change
Pill and IUD users (per 100 women)	22	29	+32
Abortion rate (per 1,000 women)	73	62	-15

Sources: Church and Koutanev (1995) and Ministry of Health (1996)

5.7 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 5.8 shows the relevant statistics. Twenty-three percent of induced abortions are preceded by a contraceptive failure.[5] Most method failures resulting in abortions occur while using the IUD, although failures associated with use of condoms and periodic abstinence are significant. It seems clear that the availability of more reliable methods and greater consistency of method use would reduce the incidence of induced abortion.

Table 5.8 Use of contraception prior to pregnancy

Percentage of live births, all pregnancies, and pregnancies terminated by induced abortion in the three years preceding the survey by the contraceptive method used, if any, at the time of becoming pregnant, Kazakstan 1995

Use of contraception	Live births	Induced abortions	All pregnancies[1]
No contraception	98.2	77.3	89.9
Any method	1.8	22.7	10.1
Any modern method	1.4	16.6	7.6
Pill	0.2	2.4	1.1
IUD	1.0	10.0	4.5
Condom	0.2	4.2	2.0
Any traditional method	0.5	6.1	2.5
Periodic abstinence	0.3	4.4	1.8
Withdrawal	0.0	0.6	0.2
Douche	0.1	1.1	0.5
Total	100.0	100.0	100.0
Number of pregnancies	810	565	1,499

[1] Includes stillbirths and miscarriages

[5] Another study of the reproductive practices of urban women in Kazakstan found that 33 percent of recent induced abortions were preceded by contraceptive failure (Foreit and McCombie, 1995).

5.8 Service Providers and Procedures Used for Abortion

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 5.9 indicates that a substantial majority of abortions, 66 percent, are performed at a hospital and another 27 percent at a polyclinic. Only 7 percent of abortions are performed at a place other than a hospital or polyclinic. The vast majority of abortions, 96 percent, are performed by a doctor.

Table 5.9 also shows the distribution of abortions by procedure used. Dilation and curettage is the procedure used for almost two-thirds of abortions (62 percent) while vacuum aspiration is employed for about one-third of the cases (35 percent). A small proportion of abortions are performed by Caesarean section (2 percent). Of the events occurring in hospitals (figures not shown), dilation and curettage is the procedure of choice (72 percent), while almost all other abortions are by vacuum aspiration (25 percent) and a small proportion are by Caesarean section (3 percent). Alternatively, abortions performed at polyclinics are about equally likely to be performed by dilation and curettage (48 percent) and vacuum aspiration (52 percent).

Table 5.9 Source of services, type of provider, and procedure used for abortion

Percent distribution of induced abortions in the three years peceding the survey by source of services, type of provider, and procedure used, Kazakstan 1995

Characteristic	Percent
Source of services	
Hospital	66.0
Polyclinic	26.7
Other	3.6
Public fee for service	2.9
Other	0.8
Type of provider	
Doctor	96.0
Nurse, midwife	3.3
Other	0.7
Procedure	
Dilation and curettage	62.3
Vacuum aspiration	35.2
Caesarean section	2.3
Total	100.0
Number of induced abortions	565

Table 5.10 Health problems following abortion

Percentage of induced abortions in the three years preceding the survey in which women had selected specific health problems, and complications requiring hospitalization, Kazakstan 1995

Type of health problem	Percent
Specific health problems	
Infection	6.6
Lack of menstruation	6.9
Excessive bleeding	9.0
Complications requiring hospitalization	6.6
Number of induced abortions	565

5.9 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 if they were hospitalized as a result of their problem. Approximately 20 percent of respondents have had health problems following the abortion. The most commonly reported problems are infection, lack of menstruation, and excessive bleeding (Table 5.10).

Seven percent of women report that they had been hospitalized as a result of problems relating to their abortion (Table 5.10). The mean length of hospital stay for these women is 14 days. Hospitalization is reported at about the same rate for abortions performed by dilation and curettage as for those performed by vacuum aspiration. The hospitalization rate for health problems following an abortion seems high. However, it should be kept in mind that the number of cases of abortion in the survey is small so that the variance of the estimated statistic is large. Additionally, recourse to hospitalization is a common treatment pattern for reproductive health problems in Kazakstan, as in most of the republics of the former Soviet Union, so that the severity of a health problem can not be readily inferred from the fact of hospitalization.

CHAPTER 6

OTHER PROXIMATE DETERMINANTS OF FERTILITY

Kia I. Weinstein

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.

Two-thirds of women are currently in a union (67 percent are married or living together). While the majority of women are in a union, a fair proportion enter their twenties having never been married (32 percent of women age 20-24 are never-married). Eighty-two percent of women age 30 and older are in a union; 9 percent are divorced or separated. As expected, the proportion of women who are widowed increases with age, reaching 11 percent among those 45-49 years.

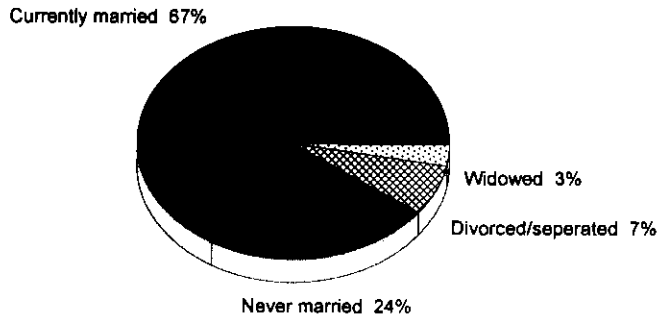
Table 6.1 Current marital status

Percent distribution of women by current marital status, according to age, Kazakstan 1995

Age	Marital status						Total	Number
	Never married	Married	Living together	Widowed	Divorced	Not living together		
15-19	86.6	10.8	1.2	0.0	0.5	0.9	100.0	669
20-24	31.8	57.1	4.1	0.3	2.7	3.9	100.0	567
25-29	10.2	79.6	1.9	0.4	5.2	2.6	100.0	521
30-34	4.8	79.1	3.0	3.3	8.7	1.2	100.0	557
35-39	4.2	82.6	2.8	3.5	5.7	1.1	100.0	564
40-44	2.3	80.3	2.8	5.1	8.3	1.2	100.0	537
45-49	2.7	74.2	1.3	10.9	9.5	1.4	100.0	355
Total	23.5	64.0	2.5	2.9	5.4	1.8	100.0	3,771

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

Figure 6.1
Marital Status of Women 15-49



KDHS 1995

Because marriage is not an exact measure of exposure to the risk of pregnancy, the 1995 KDHS also asked the one-third of 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 type of current sexual relationship.

Most women who are not currently married (never married or previously married) report that they have no sexual partner (84 percent). However, there are significant differences in sexual activity by background characteristics. While only 5 to 20 percent of unmarried women in all regions other than Almaty City have a sexual partner, 35 percent of unmarried women in Almaty City have a regular or occasional sexual partner. The likelihood of having a sexual partner increases with increasing education. While only 9 percent of women with primary or secondary schooling have a sexual partner, one-quarter of women with higher education have a sexual partner. A large differential also exists between ethnic Kazak and ethnic Russian women: 9 percent of ethnic Kazak women report having a partner, while 30 percent of ethnic Russian women have a sexual partner.

Women who have previously been in a union (30 percent of those who are not married) are much more likely to have a sexual partner than women who have never been married. Twenty-seven percent of women who have previously been in a union report themselves as having a regular or occasional sexual partner; only 11 percent of never married women have a regular or occasional sexual partner. Adolescent sexual activity is relatively low in Kazakstan; 7 percent of teens report having a regular or occasional sexual partner. Unmarried women in their early thirties are the most likely to have a sexual partner (36 percent of 30-34 year-olds).

Table 6.2 Sexual relationships of nonmarried women

Percent distribution of women currently not in a union by type of current sexual relationship, by selected background characteristics, Kazakstan 1995

Background characteristic	Never married			Widowed, divorced, not living together			Total	Number of women
	Regular sexual partner	Occasional sexual partner	No sexual partner	Regular sexual partner	Occasional sexual partner	No sexual partner		
Age								
15-19	4.4	2.1	92.0	0.7	0.2	0.7	100.0	588
20-24	9.6	5.1	67.4	3.6	2.0	12.3	100.0	220
25-29	7.8	4.0	43.5	13.0	3.2	28.5	100.0	96
30-34	3.6	0.5	22.5	24.1	7.3	42.0	100.0	100
35-39	1.3	5.7	21.8	19.7	2.6	48.8	100.0	82
40-44	0.0	1.9	11.5	7.9	1.5	77.2	100.0	91
45-49	3.1	0.0	7.7	3.7	7.4	78.0	100.0	87
Residence								
Urban	7.1	3.7	54.2	8.0	2.7	24.3	100.0	735
Rural	1.8	1.4	73.8	3.2	1.1	18.8	100.0	529
Region								
Almaty City	8.2	5.7	41.4	14.3	6.6	23.8	100.0	108
South	0.4	1.7	75.1	2.6	0.0	20.2	100.0	395
West	5.7	1.3	64.4	4.3	2.1	22.3	100.0	179
Central	6.8	1.2	62.8	7.5	3.4	18.3	100.0	124
North and East	7.2	3.8	55.5	7.1	2.3	24.1	100.0	458
Education								
Primary/Secondary	1.9	1.8	74.0	5.0	0.3	16.9	100.0	583
Secondary-special	6.8	2.5	52.5	5.7	3.8	28.7	100.0	461
Higher	8.7	5.6	52.5	8.9	2.9	21.4	100.0	220
Ethnicity								
Kazak	2.0	2.0	73.6	3.7	0.8	17.9	100.0	632
Russian	10.6	3.9	46.1	10.6	5.1	23.6	100.0	378
Other	3.6	2.7	58.7	4.7	0.4	29.9	100.0	254
Total	4.9	2.7	62.4	6.0	2.0	22.0	100.0	1,264

6.2 Age at First Marriage

Marriage is an important demographic and social indicator; it generally marks the point in a woman's life when childbearing becomes welcome. Information on age at first marriage was obtained by asking all ever-married respondents the month and year they started living together with their first spouse. Virtually all women were able to report this date. The data in Table 6.3 show that the median age at marriage has been hovering at about 21 years for some time. This means that half the women in Kazakstan marry before age 21.

Cohort trends in age at marriage can also be described by comparing the cumulative distribution for successive age groups, as shown in Table 6.3.[1] While the KDHS did not find a marked change in the median

[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 6.3 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, Kazakstan 1995

Current age	Percentage who were first married by exact age: 15	18	20	22	25	Percentage who had never married	Number of women	Median age at first marriage
15-19	0.2	NA	NA	NA	NA	86.6	669	a
20-24	0.4	18.5	44.5	NA	NA	31.8	567	a
25-29	0.2	7.2	30.6	60.6	84.8	10.2	521	21.2
30-34	0.4	8.9	33.0	61.1	86.1	4.8	557	21.3
35-39	0.4	9.1	34.9	65.1	81.8	4.2	564	20.9
40-44	0.5	10.0	34.8	63.2	84.7	2.3	537	20.9
45-49	1.3	16.0	40.0	64.1	86.6	2.7	355	20.8
25-49	0.5	9.8	34.3	62.7	84.6	4.9	2,535	21.0

NA = Not applicable
[a] Omitted because less than 50 percent of the women in the age group x to $x+4$ were first married by age x.

age at marriage over time, it did find that the proportion marrying at the youngest ages has declined. The median is a summary measure, indicating the age by which half the population has married, but there can be a shift in the age at marriage which would not be reflected in the median. For example, there has been a gradual yet steady decline in the proportions marrying by age 18, from 16 percent of 45-49 year-olds down to 7 percent of 25-29 year-olds. However, women currently age 20-24 seem to be an exception to the trend. Young women would presumably have the most accurate reporting of dates of marriage because they married most recently. The data show that 20-24 year-olds are in fact marrying earlier than their predecessors. Overall, the majority of women in Kazakstan marry within a relatively narrow age range. One-third of women are married by age 20, and nearly an additional third by age 22.

Table 6.4 presents the median ages at marriage for women age 25-49 by selected background characteristics. The most pronounced differential in median age at marriage is one that is observed in many societies—age at marriage increases with increasing education. A differential of two years in the median from least to most educated occurs within every age group; women with higher education have a median age at marriage (22.6) which is more than two years later than women with a primary or secondary education (20.1). The other significant differential is that ethnic Kazaks have a median age at marriage (21.7) that is one year later than ethnic Russians (20.5); this differential has been holding steady for over 20 years. Overall, while some differentials exist in age at marriage within the population, these data indicate that there has been no major change in age at marriage in Kazakstan over the past 20 years.

Table 6.4 Median age at first marriage

Median age at first marriage among women age 25-49 years, by current age and selected background characteristics, Kazakstan 1995

Background characteristic	Current age					Women age 25-49
	25-29	30-34	35-39	40-44	45-49	
Residence						
Urban	20.9	21.3	21.1	21.4	21.0	21.2
Rural	21.6	21.2	20.7	20.3	20.4	20.9
Region						
Almaty City	21.4	21.3	21.7	21.8	21.8	21.6
South	21.2	21.5	20.7	20.4	20.9	21.0
West	22.0	21.9	21.4	21.0	20.5	21.5
Central	21.8	21.0	21.8	20.8	20.9	21.2
North and East	20.7	20.8	20.7	21.1	20.6	20.8
Education						
Primary/Secondary	20.1	20.2	20.7	20.3	19.2	20.1
Secondary-special	21.0	21.2	20.7	20.8	21.4	21.0
Higher	22.5	22.4	22.2	22.8	23.3	22.6
Ethnicity						
Kazak	22.1	21.8	21.9	21.2	21.5	21.7
Russian	20.5	20.6	20.4	20.7	20.5	20.5
Other	20.5	20.8	20.6	21.0	20.0	20.7
Total	21.2	21.3	20.9	20.9	20.8	21.0

Note: The medians for women 15-19 and 20-24 could not be determined because less than 50 percent were married by age 15 and 20 in all subgroups shown in the table.

6.3 Age at First Sexual Intercourse

While age at first marriage is commonly used as a proxy for exposure to intercourse, the two events do not always coincide exactly. Some women may engage in sexual relations prior to marriage, in which case, the proportion of married women would underestimate the percent of women who are sexually active. The KDHS asked women to state the age at which they first had sexual intercourse. The results are presented in Tables 6.5 and 6.6.

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, Kazakstan 1995

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	1.4	NA	NA	NA	NA	79.5	669	a
20-24	1.1	23.9	52.5	NA	NA	23.6	567	a
25-29	0.3	10.4	38.8	65.9	85.8	7.7	521	20.7
30-34	0.5	11.5	38.2	64.3	86.4	3.2	557	20.9
35-39	0.5	10.6	38.1	66.9	82.1	2.9	564	20.7
40-44	0.5	11.2	38.5	64.1	86.0	1.2	537	20.8
45-49	1.3	17.1	42.0	66.2	89.7	1.2	355	20.6
25-49	0.6	11.8	38.9	65.4	85.7	3.4	2,535	20.8

NA = Not applicable
[a] Omitted because less than 50 percent in the age group x to $x+4$ had had intercourse by age x.

As observed for marriage, there has been no great change over time in the median age at first intercourse. However, by comparing Table 6.5 with Table 6.3, it can be seen that the proportion of women having first intercourse by specific ages is slightly higher than the proportions married at that age. For example, 34 percent of women are married by age 20 while 39 percent have had sexual intercourse by age 20.

Table 6.6 presents the median age at first intercourse by age and selected background characteristics. By comparing Tables 6.4 and 6.6, it can be seen that most of the differential between age at marriage and age at first intercourse is attributable to younger women. These women tend to have higher education, and live in urban areas. Ethnic Russian women age 25-29 have a median age at first intercourse that is one year earlier than their median age at first marriage.

Table 6.6 Median age at first intercourse

Median age at first sexual intercourse among women age 25-49 years, by current age and selected background characteristics, Kazakstan 1995

Background characteristic	Current age					Women age 25-49
	25-29	30-34	35-39	40-44	45-49	
Residence						
Urban	20.2	20.7	20.7	21.2	20.9	20.7
Rural	21.5	21.1	20.8	20.1	20.0	20.8
Region						
Almaty City	20.7	20.5	21.1	21.5	21.1	20.9
South	21.1	21.5	20.7	20.3	20.8	21.0
West	21.7	22.1	21.3	20.9	20.2	21.3
Central	21.1	20.8	21.6	20.7	20.7	21.0
North and East	19.8	20.0	20.4	21.0	20.4	20.3
Education						
Primary/Secondary	19.8	19.9	20.6	20.0	19.0	19.9
Secondary-special	20.6	20.8	20.4	20.6	21.2	20.7
Higher	21.7	22.2	21.9	22.8	22.9	22.3
Ethnicity						
Kazak	22.0	21.7	21.9	21.2	21.5	21.7
Russian	19.5	19.8	20.0	20.5	20.3	20.0
Other	20.2	20.4	20.5	20.7	19.7	20.3
Total	20.7	20.9	20.7	20.8	20.6	20.8

Note: The median for cohorts 15-19 and 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 (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, 62 percent of all women interviewed were sexually active in the four weeks preceding the survey. Only 2 percent of women are postpartum abstaining, 15 percent of women are not sexually active

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, Kazakstan 1995

Background characteristic/ contraceptive method	Sexually active in last 4 weeks	Not sexually active in last 4 weeks: Abstaining (postpartum) 0-1 years	Abstaining (postpartum) 2+ years	Abstaining (not postpartum) 0-1 years	Abstaining (not postpartum) 2+ years	Never had sex	Missing	Total	Number of women
Age									
15-19	14.7	1.0	0.0	4.7	0.0	79.5	0.1	100.0	669
20-24	58.6	4.3	0.4	11.1	1.5	23.6	0.5	100.0	567
25-29	75.6	3.4	0.0	10.3	2.1	7.7	0.8	100.0	521
30-34	81.5	1.1	0.2	9.1	4.3	3.2	0.6	100.0	557
35-39	80.3	1.0	0.2	10.0	4.2	2.9	1.5	100.0	564
40-44	73.8	0.6	0.0	11.3	11.3	1.2	1.7	100.0	537
45-49	61.1	0.0	0.0	19.6	16.4	1.2	1.7	100.0	355
Duration of union (years)									
Never married	7.2	0.6	0.0	5.4	1.8	84.9	0.1	100.0	885
0-4	80.3	6.6	0.3	10.7	0.9	0.0	1.1	100.0	541
5-9	82.0	2.0	0.2	11.1	3.9	0.0	0.8	100.0	564
10-14	83.4	1.1	0.1	9.7	4.8	0.0	0.9	100.0	516
15-19	79.8	0.6	0.2	11.0	7.5	0.0	0.9	100.0	524
20-24	78.6	0.5	0.0	10.7	8.3	0.0	1.9	100.0	443
25-29	66.0	0.0	0.0	19.1	13.4	0.0	1.4	100.0	257
30+	(44.7)	(0.0)	(0.0)	(33.6)	(19.0)	(0.0)	(2.7)	100.0	41
Residence									
Urban	63.1	1.3	0.1	11.9	5.4	17.5	0.7	100.0	2,133
Rural	61.0	2.2	0.1	8.1	4.4	23.1	1.2	100.0	1,638
Region									
Almaty City	61.6	1.6	0.3	17.1	5.2	13.7	0.5	100.0	271
South	59.8	1.6	0.2	8.1	4.7	24.3	1.3	100.0	1,206
West	57.8	1.6	0.0	11.2	5.1	23.2	1.2	100.0	477
Central	62.8	1.8	0.2	11.0	3.7	19.2	1.2	100.0	358
North and East	65.6	1.7	0.0	10.2	5.3	16.5	0.6	100.0	1,458
Education									
Primary/Secondary	52.1	1.6	0.3	9.1	5.2	30.7	1.0	100.0	1,380
Secondary-special	69.0	1.5	0.0	10.5	4.7	13.3	0.9	100.0	1,721
Higher	65.5	2.3	0.1	11.8	5.1	14.6	0.7	100.0	670
Ethnicity									
Kazak	56.8	2.1	0.1	8.6	4.9	26.3	1.3	100.0	1,696
Russian	69.3	1.5	0.2	12.1	3.7	12.4	0.8	100.0	1,309
Other	62.0	1.1	0.1	10.7	7.1	18.7	0.3	100.0	766
Contraceptive method									
No method	40.8	2.8	0.2	12.3	7.4	35.1	1.3	100.0	2,140
Pill	88.8	0.0	0.0	11.2	0.0	0.0	0.0	100.0	55
IUD	90.4	0.1	0.0	7.1	2.2	0.0	0.3	100.0	1,054
Condom	91.0	0.0	0.0	8.7	0.0	0.0	0.3	100.0	128
Periodic abstinence	90.0	0.0	0.0	9.7	0.3	0.0	0.0	100.0	190
Other	89.9	1.0	0.0	6.4	1.6	0.0	1.2	100.0	204
Total	62.2	1.7	0.1	10.2	4.9	19.9	0.9	100.0	3,771

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

for reasons unrelated to childbirth, and 20 percent of women have never had sexual intercourse. The relatively low percentage of women sexually active is mostly attributable to women in their teens who have never had intercourse, and women over age 45. At least three-quarters of women age 25-39 are sexually active. Ethnic Russians are a bit more likely than ethnic Kazaks to be sexually active (69 versus 57 percent, respectively).

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 (much of the difference is due to the fact that many of the women using no method have not yet had intercourse). Sexual activity does not vary greatly by method of contraception.

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.

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, Kazakstan 1995

Months since birth	Amenor-rheic	Abstaining	Insus-ceptible	Number of births
< 3	89.0	64.7	92.8	59
3-5	50.8	17.0	55.2	58
6-8	26.3	4.5	28.4	69
9-11	28.8	7.5	30.1	66
12-14	17.0	6.4	18.9	79
15-17	15.1	9.3	19.3	67
18-20	2.7	2.7	5.3	64
21-23	0.9	5.8	6.7	77
24-26	4.1	2.9	5.4	69
27-29	0.6	0.6	1.2	71
30-32	0.0	0.0	0.0	51
33-35	2.4	2.4	4.7	72
Total	18.7	9.7	21.2	803
Median	4.6	2.3	5.1	-
Mean	7.4	4.1	8.3	-
Prevalence/ Incidence mean[1]	6.6	3.4	7.5	-

[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).

The percentage of births during the last three years whose mothers are presently 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 three-month intervals to minimize fluctuations in the estimates.

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. Nearly all women (93 percent) are insusceptible to pregnancy in the first three months following a birth. However, three months after giving birth the proportion of insusceptible women falls quite rapidly. In the 3-5 months following a birth, 55 percent of women are still insusceptible, although only 17 percent are still abstaining and 51 percent are still amenorrheic. By 6-8 months, the proportion still insusceptible drops to just over one-quarter of mothers (28 percent). The median duration is 4.6 months for amenorrhea, 2.3 months for abstinence, and 5.1 months for insusceptibility.

Table 6.9 presents the median durations of postpartum amenorrhea, abstinence, and insusceptibility by background characteristics. Differences are not very large, although median durations of amenorrhea show a bit more variability than do median durations of abstinence. The most notable difference in duration of amenorrhea is found among women in the West, who remain amenorrheic about three months longer than other women. Women with higher education, as well as ethnic Russian women remain amenorrheic about one month longer than other women. The only notable difference by background characteristics in the median duration of postpartum abstinence is that the duration increases with increasing education, from 1.6 to 3.4 months.

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, Kazakstan 1995

Background characteristic	Postpartum amenorrhea	Postpartum abstinence	Postpartum insuscep-tibility	Number of births
Age				
<30	4.2	1.9	4.6	563
30+	4.4	2.3	4.5	241
Residence				
Urban	4.1	2.0	4.3	339
Rural	4.4	2.2	5.1	464
Region				
Almaty City	4.5	2.5	9.8	35
South	4.8	2.0	5.0	370
West	7.3	2.2	7.3	107
Central	3.5	2.0	4.5	84
North and East	3.6	2.1	3.9	208
Education				
Primary/Secondary	4.2	1.6	4.9	291
Secondary-special	4.1	2.2	4.3	383
Higher	5.0	3.4	5.2	129
Ethnicity				
Kazak	4.3	2.2	4.7	483
Russian	5.3	2.1	6.7	174
Other	3.5	1.4	3.5	146
Total	4.2	2.1	4.6	803

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.

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, Kazakstan 1995

Age	Menopause[1]		Long-term abstinence[2]	
	Percent	Number	Percent	Number
30-34	2.0	418	0.0	458
35-39	1.4	461	0.0	482
40-41	0.6	162	2.2	165
42-43	3.4	200	0.0	203
44-45	7.5	159	2.2	159
46-47	22.2	108	0.9	108
48-49	48.0	80	6.1	80
Total	6.1	1,588	0.8	1,654

[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.

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 8 percent among women age 44-45 to 48 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 a minor contributor to the lower fertility of older women. The proportion of currently married women who have not had sexual intercourse in the last three years does not exceed 2 percent except among women age 48-49, among whom 6 percent are abstaining.

A potentially more significant factor in reducing risk of exposure to pregnancy than terminal abstinence may be divorce, widowhood, and separation among women in Kazakstan. As shown in Table 6.1, 15 percent of women age 40-44 and 22 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.

CHAPTER 7

FERTILITY PREFERENCES

Kia I. Weinstein

Women interviewed in the 1995 KDHS 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 relive 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, either to space or to 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. The majority of women say they want no more children or are sterilized (60 percent). One-third of women do want a child in the future, although half of these women (55 percent) would like to wait two or more years before having that child. Thus, the large majority of women (79 percent) want to either delay their next birth (19 percent) or stop childbearing altogether. These are the women who are potentially in need of some method of family planning.

As is true in most populations, the proportion of women who want no more children increases as the number of children they already have increases. However, in Kazakstan, the proportion who want to delay childbearing or want no more children rises steeply and quickly. Two-thirds of women with one child (68 percent) want to either delay their next birth or stop childbearing altogether (Figure 7.2). While the majority of women with one child still want another child, the majority of women with two children (67 percent) want no more or are sterilized. The proportion wanting no more children continues to rise as the number of living children increases.

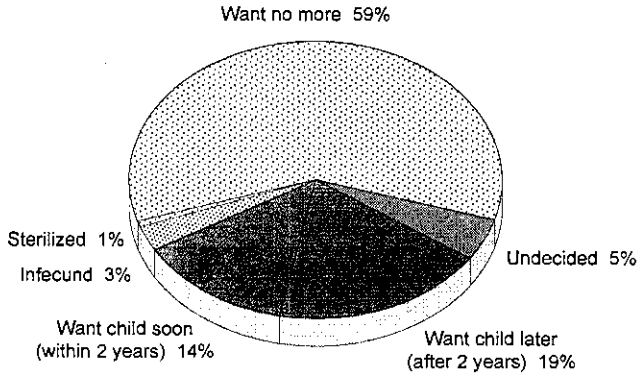
Table 7.1 Fertility preferences by number of living children

Percent distribution of currently married women by desire for more children, according to number of living children, Kazakstan 1995

Desire for children	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
Have another soon[2]	75.8	21.2	8.4	6.8	5.7	2.3	0.0	13.7
Have another later[3]	7.0	39.4	17.9	9.8	8.0	4.6	2.0	18.6
Have another, undecided when	2.9	2.5	1.8	1.0	0.3	0.0	0.0	1.6
Undecided	0.0	4.1	3.2	3.9	2.3	1.3	1.9	3.1
Want no more	1.1	28.6	65.7	76.7	81.5	88.7	90.6	59.4
Sterilized	0.0	0.4	0.8	0.5	0.0	0.7	4.4	0.7
Declared infecund	13.1	3.8	2.1	1.3	2.1	2.5	1.0	2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	134	555	970	410	208	122	108	2,507

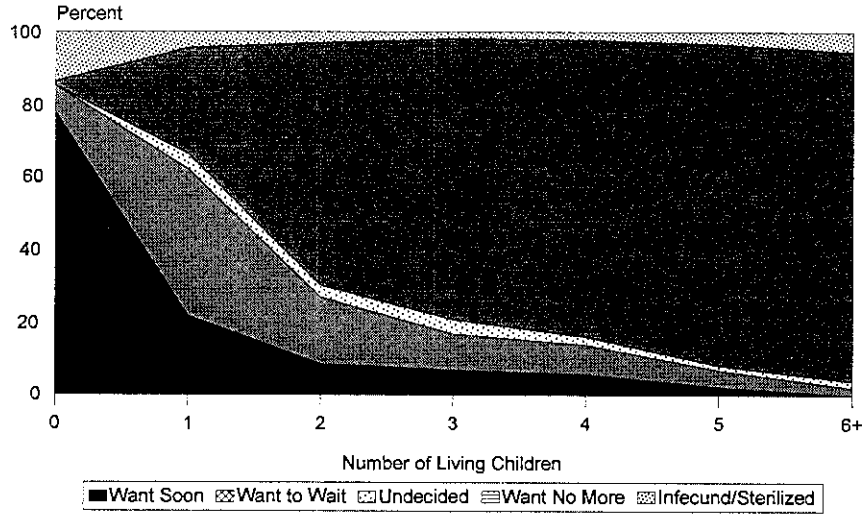
[1] Includes current pregnancy
[2] Want next birth within 2 years
[3] Want to delay next birth for 2 or more years

Figure 7.1
Fertility Preferences among Currently Married Women 15-49



KDHS 1995

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



KDHS 1995

Table 7.2 shows how rapidly the desire to limit childbearing increases with age. The majority that want to either space or limit their childbearing is achieved by the time women reach their early twenties. Only 23 percent of women in their early twenties want a child within the next two years. By the time women reach their early thirties, more than half (57 percent) want to stop their childbearing altogether, when they still have many potential years of childbearing ahead of them. Three-quarters of women in their late thirties want no more children.

Table 7.2 Fertility preferences by age

Percent distribution of currently married women by desire for more children, according to age, Kazakstan 1995

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]	29.7	22.6	20.3	16.5	9.9	6.1	1.6	13.7
Have another later[2]	46.3	51.6	32.2	17.7	5.0	1.6	0.3	18.6
Have another, undecided when	3.3	2.0	1.6	2.1	2.4	0.6	0.2	1.6
Undecided	2.6	4.5	5.2	4.3	3.3	0.7	0.0	3.1
Want no more	18.1	19.2	39.1	55.9	74.4	85.7	90.8	59.4
Sterilized	0.0	0.0	0.6	0.9	0.4	1.9	0.3	0.7
Declared infecund	0.0	0.1	1.1	2.7	4.7	3.3	6.7	2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	80	347	425	458	482	447	268	2,507

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

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 strong differences in how quickly women with different background characteristics reach the point of wanting no more children. Three-quarters of urban women with two children (74 percent) want no more; the same proportion is not reached among rural women until they have three children. While there exists some variability in fertility preferences across the regions of Kazakstan, the most notable are in the South and West Regions, where three-fourths of women wanting no more children is not reached until women have four children. Comparing fertility desires by ethnicity, Russians consistently are more inclined to want no more children at every parity. Seventy-seven percent of Russian women with two children want no more; a similar proportion is reached among Kazak women (79 percent) once they have four children. There is no strong relationship between education and wanting no more children.

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, Kazakstan 1995

Background characteristic	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
Residence								
Urban	1.3	36.3	73.7	80.1	84.0	(87.2)	*	62.0
Rural	0.8	16.3	52.9	74.6	80.2	90.1	95.5	57.6
Region								
Almaty City	(0.0)	31.0	74.5	(80.0)	*	*	*	52.0
South	(0.0)	8.6	44.7	68.8	74.9	(88.7)	94.1	51.9
West	*	30.5	64.8	67.5	79.4	(75.7)	(94.3)	59.6
Central	*	33.0	73.9	81.2	(86.4)	(91.3)	*	65.2
North and East	*	38.1	75.0	91.0	(92.3)	*	*	66.9
Education								
Primary/Secondary	(3.9)	29.2	61.6	76.1	75.5	91.8	94.4	62.7
Secondary-special	0.0	27.7	68.6	81.8	87.5	(86.8)	(100.0)	60.2
Higher	(0.0)	32.6	67.1	65.6	*	*	*	55.2
Ethnicity								
Kazak	0.0	12.7	48.6	68.8	78.7	87.6	95.1	54.4
Russian	2.9	38.4	77.2	93.1	*	*	*	64.7
Other	(0.0)	33.6	70.8	78.5	(83.3)	*	*	63.4
Total	1.1	29.0	66.5	77.2	81.5	89.4	95.0	60.1

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

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. Women with unmet need and met need constitute the *total demand* for family planning. Tables 7.4.1, 7.4.2, and 7.4.3 present data on unmet need, met need and total demand for family planning, according to whether the need is for spacing or limiting births. Findings are presented for currently married women, women not currently married, and all women combined.

Sixteen percent of married women in Kazakstan have an unmet need for family planning services, 4 percent for spacing births and 12 percent for limiting births (Table 7.4.1). Combined with the 59 percent of married women who are currently using a contraceptive method, the total demand for family planning comprises three-quarters of married women in Kazakstan. 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 59 to 75 percent of married women.

Table 7.4.1 Need for family planning services: currently married women

Percentage of currently married women with unmet need for family planning, and met need for family planning, and the total demand for family planning services, by selected background characteristics, Kazakstan 1995

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	16.5	3.4	20.0	26.5	5.0	31.5	43.0	8.4	51.4	61.2	80
20-24	11.1	5.3	16.4	37.5	9.6	47.0	48.6	14.9	63.5	74.1	347
25-29	5.5	6.9	12.3	34.8	26.2	61.0	40.3	33.1	73.3	83.2	425
30-34	3.2	6.2	9.4	26.2	45.5	71.7	29.4	51.7	81.2	88.4	458
35-39	1.2	12.3	13.5	11.8	57.7	69.5	13.0	70.1	83.0	83.7	482
40-44	0.7	19.3	20.0	4.0	59.4	63.3	4.7	78.7	83.4	76.0	447
45-49	0.2	26.4	26.6	1.1	31.6	32.6	1.2	58.0	59.2	55.1	268
Residence											
Urban	2.6	12.8	15.5	20.1	41.8	61.9	22.8	54.6	77.3	80.0	1,398
Rural	5.6	10.5	16.1	19.4	36.2	55.6	25.0	46.6	71.7	77.6	1,109
Region											
Almaty City	4.6	9.2	13.7	26.4	38.0	64.4	31.0	47.2	78.2	82.4	164
South	5.8	10.0	15.8	20.5	29.7	50.2	26.3	39.7	66.0	76.0	811
West	4.1	13.4	17.4	17.5	34.4	51.9	21.6	47.7	69.3	74.9	298
Central	2.4	10.0	12.4	19.3	46.9	66.2	21.7	56.9	78.6	84.2	235
North and East	2.6	13.6	16.3	19.0	46.9	66.0	21.7	60.6	82.2	80.2	1,000
Education											
Primary/Secondary	5.5	13.1	18.6	14.7	37.1	51.8	20.3	50.2	70.4	73.6	798
Secondary-special	3.2	11.7	14.9	20.9	41.1	62.0	24.1	52.7	76.8	80.7	1,259
Higher	3.3	9.8	13.1	25.8	38.2	64.0	29.1	48.0	77.1	83.0	450
Ethnicity											
Kazak	5.8	10.4	16.2	21.0	32.5	53.5	26.8	42.9	69.7	76.8	1,064
Russian	2.3	12.9	15.1	19.6	45.5	65.1	21.9	58.4	80.2	81.1	930
Other	3.2	12.7	15.9	17.8	42.1	59.9	21.0	54.7	75.7	79.1	513
Total	4.0	11.8	15.7	19.8	39.3	59.1	23.8	51.1	74.8	79.0	2,507

[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.

Table 7.4.2 Need for family planning services: unmarried women

Percentage of unmarried women with unmet need for family planning, and met need for family planning, and the total demand for family planning services, by selected background characteristics, Kazakstan 1995

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	0.7	0.0	0.7	3.7	0.0	3.7	4.4	0.0	4.4	84.4	588
20-24	0.7	0.0	0.7	14.2	2.1	16.3	14.9	2.1	17.0	95.9	220
25-29	2.3	0.6	2.9	12.7	6.8	19.5	15.0	7.4	22.4	87.1	96
30-34	0.7	2.8	3.5	16.1	17.6	33.7	16.7	20.5	37.2	90.5	100
35-39	0.7	4.7	5.4	7.8	8.5	16.3	8.4	13.2	21.6	75.2	82
40-44	0.0	1.2	1.2	3.0	9.8	12.9	3.0	11.1	14.1	91.2	91
45-49	0.0	1.1	1.1	0.0	15.9	15.9	0.0	17.1	17.1	93.3	87
Residence											
Urban	1.2	1.1	2.2	9.5	5.3	14.9	10.7	6.4	17.1	87.0	735
Rural	0.1	0.3	0.4	3.9	3.6	7.5	4.0	3.9	7.9	95.1	529
Region											
Almaty City	1.2	1.6	2.9	17.2	9.4	26.6	18.4	11.1	29.5	90.3	108
South	0.0	0.3	0.3	1.3	1.3	2.6	1.3	1.6	2.9	90.0	395
West	1.9	1.4	3.3	7.1	3.2	10.3	9.0	4.6	13.6	75.7	179
Central	1.7	1.3	3.0	5.7	5.9	11.6	7.4	7.2	14.6	79.2	124
North and East	0.5	0.5	1.0	10.3	6.6	16.9	10.8	7.1	17.9	94.4	458
Education											
Primary/Secondary	0.5	0.8	1.3	4.2	2.5	6.7	4.7	3.3	8.0	84.1	583
Secondary-special	0.8	0.6	1.4	7.9	6.6	14.4	8.7	7.2	15.9	91.0	461
Higher	1.1	1.0	2.0	13.6	6.2	19.8	14.6	7.2	21.8	90.7	220
Ethnicity											
Kazak	0.4	0.5	0.9	4.3	3.1	7.4	4.8	3.6	8.4	89.0	632
Russian	1.3	1.4	2.7	13.2	8.4	21.6	14.5	9.8	24.3	88.8	378
Other	0.5	0.4	0.9	5.3	2.8	8.1	5.8	3.2	9.0	89.8	254
Total	0.7	0.7	1.5	7.2	4.6	11.8	7.9	5.4	13.3	89.0	1,264

[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.

Table 7.4.3 Need for family planning services: all women

Percentage of all women with unmet need for family planning, and met need for family planning, and the total demand for family planning services, by selected background characteristics, Kazakstan 1995

Background characteristic	Unmet need for family planning[1]			Met need for family planning (currently using)[2]			Total demand for family planning			Percentage of demand satisfied	Number of women
	For spacing	For limiting	Total	For spacing	For limiting	Total	For spacing	For limiting	Total		
Age											
15-19	2.6	0.4	3.0	6.5	0.6	7.1	9.1	1.0	10.1	70.2	669
20-24	7.1	3.2	10.3	28.4	6.7	35.1	35.5	9.9	45.5	77.3	567
25-29	4.9	5.7	10.6	30.7	22.6	53.3	35.6	28.3	63.9	83.4	521
30-34	2.8	5.6	8.4	24.4	40.5	64.9	27.2	46.1	73.3	88.6	557
35-39	1.1	11.2	12.3	11.2	50.6	61.8	12.3	61.8	74.1	83.4	564
40-44	0.6	16.3	16.9	3.8	51.0	54.8	4.4	67.3	71.7	76.5	537
45-49	0.1	20.2	20.4	0.8	27.8	28.5	0.9	48.0	48.9	58.4	355
Residence											
Urban	2.1	8.8	10.9	16.5	29.2	45.7	18.6	38.0	56.6	80.7	2,133
Rural	3.8	7.2	11.0	14.4	25.7	40.1	18.2	32.9	51.1	78.4	1,638
Region											
Almaty City	3.3	6.2	9.4	22.8	26.7	49.4	26.0	32.8	58.9	84.0	271
South	3.9	6.8	10.7	14.2	20.4	34.6	18.1	27.2	45.3	76.3	1,206
West	3.2	8.9	12.1	13.6	22.7	36.3	16.8	31.5	48.4	75.0	477
Central	2.2	7.0	9.2	14.6	32.8	47.4	16.8	39.8	56.5	83.8	358
North and East	2.0	9.5	11.5	16.3	34.3	50.6	18.2	43.8	62.0	81.5	1,458
Education											
Primary/Secondary	3.4	7.9	11.3	10.3	22.5	32.8	13.7	30.4	44.1	74.4	1,380
Secondary-special	2.6	8.7	11.3	17.4	31.8	49.2	20.0	40.5	60.5	81.4	1,721
Higher	2.6	6.9	9.5	21.8	27.7	49.5	24.3	34.7	59.0	83.9	670
Ethnicity											
Kazak	3.8	6.7	10.5	14.8	21.6	36.3	18.6	28.3	46.8	77.6	1,696
Russian	2.0	9.5	11.5	17.7	34.8	52.5	19.7	44.3	64.0	82.0	1,309
Other	2.3	8.6	10.9	13.7	29.1	42.7	16.0	37.7	53.7	79.7	766
Total	2.9	8.1	10.9	15.6	27.7	43.3	18.4	35.8	54.2	79.8	3,771

[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.

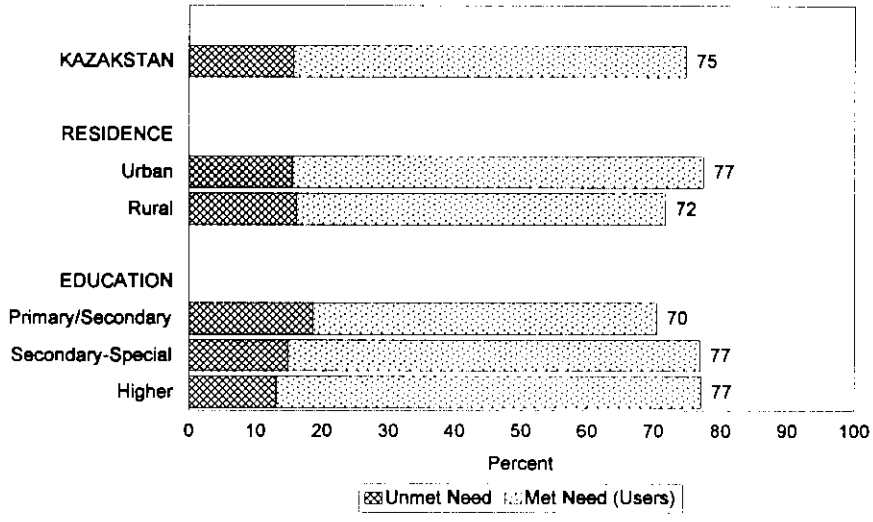
[2] Using for *spacing* is defined as women who are using some method of family planning and say they want to have another child or are undecided whether to have another. Using for *limiting* is defined as women who are using and who want no more children. Note that the specific methods used are not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

The overall unmet need for family planning follows a clear U-shaped pattern by age group, descending with increasing age, and then increasing again after reaching a low among women in their early thirties. This pattern reflects the fact that unmet need for spacing decreases with age while unmet need for limiting increases with age, which in turn follows the pattern of demand by age.

The most significant finding of Table 7.4.1 is that unmet need among currently married women does not vary greatly by urban/rural residence, region, education, or ethnicity (see Figure 7.3).

While unmarried women have a greater percentage of their contraceptive needs met, their demand is quite low (13 percent). Unmet need among unmarried women is very low (1.5 percent).

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



KDHS 1995

7.3 Ideal Family Size

Thus far, fertility desires have been examined relative to respondents' current family size. However, the KDHS also asked women how many children they would choose to have if they could go back to the time they had no children. This question is used as an indicator of ideal family size and is meant to be independent of the number of children the respondent already has, but 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.

Table 7.5 shows the percent distribution of all women by the number of children they would ideally like to have, according to the number of children they actually have. The correlation between ideal and actual number of children is quite strong. Among women with more than one child, the number most commonly reported as ideal is equal to the number of children the woman already has, at every parity. Thus, the overall mean number of children reported as ideal steadily increases with the actual number of living children. The mean ideal number of children increases from 2.5 among childless women to 5.5 among women with six or more children. Not until women have five children does the mean ideal fall below the actual number of 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, Kazakstan 1995

Ideal number of children	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
0	0.4	0.6	0.5	0.4	1.0	0.0	0.0	0.5
1	6.8	8.2	3.4	2.7	1.9	2.3	1.8	5.0
2	49.5	49.1	46.3	16.5	19.1	8.0	9.6	40.0
3	25.7	26.0	29.0	38.9	7.3	8.6	3.6	25.9
4	10.1	7.2	12.1	24.4	38.1	13.5	16.9	13.8
5	2.3	4.0	4.7	8.5	13.6	47.8	8.6	6.5
6+	1.5	1.4	1.2	5.0	13.5	12.2	44.2	4.3
Nonnumeric response	3.7	3.4	2.8	3.6	5.4	7.7	15.3	4.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	1,052	710	1,083	451	221	129	124	3,771
All women:								
Mean ideal number[2]	2.5	2.5	2.7	3.4	4.0	4.7	5.5	2.9
Number of women	1,014	686	1,053	435	209	119	105	3,621
Currently married women:								
Mean ideal number[2]	2.6	2.5	2.7	3.4	4.0	4.7	5.6	3.1
Number of women	133	543	941	395	197	113	92	2,415

[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. Given how strongly reported ideal numbers correlate with the actual number of children, the data in this table should be interpreted carefully. The overall mean ideal number gradually increases with age of the respondent, although not as greatly as it increased with parity. Women in the South report higher ideal numbers than women in other regions at every age group. Rural women and women of Kazak ethnicity report ideal numbers that increase with age to numbers above the overall mean. Those women who have the lowest actual fertility exhibit a tighter clustering around the number they consider ideal.

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, Kazakstan 1995

Background characteristic	Age of woman							Total
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Residence								
Urban	2.3	2.5	2.6	2.8	2.8	2.9	2.8	2.7
Rural	2.8	2.9	3.3	3.4	3.6	3.9	4.3	3.3
Region								
Almaty City	2.3	2.5	2.6	2.7	2.6	2.6	2.5	2.5
South	2.9	3.2	3.5	3.8	3.9	4.2	4.6	3.6
West	2.6	2.7	3.0	3.0	3.1	3.5	3.3	3.0
Central	2.3	2.4	2.7	3.0	2.9	3.3	3.3	2.8
North and East	2.1	2.3	2.5	2.6	2.6	2.7	2.5	2.5
Education								
Primary/Secondary	2.5	2.7	3.3	3.6	3.5	3.6	3.7	3.1
Secondary-special	2.5	2.7	2.9	3.0	2.8	3.1	3.1	2.9
Higher	(2.4)	2.7	2.6	2.9	3.0	2.8	3.0	2.8
Ethnicity								
Kazak	2.8	3.0	3.3	3.5	3.8	4.1	4.3	3.4
Russian	2.0	2.3	2.4	2.5	2.4	2.6	2.5	2.4
Other	2.6	2.3	2.8	3.1	2.9	2.9	3.2	2.8
Total	2.5	2.7	2.9	3.1	3.1	3.2	3.3	2.9

Note: Parentheses indicate a figure is based on 25 to 49 unweighted women.

7.4 Wanted and Unwanted Fertility

There are two ways of estimating levels of unwanted fertility from the KDHS 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 7.7 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, 16 percent of births in the three-year period were unplanned; 8 percent were mistimed (wanted later) and 8 percent were unwanted. The proportion of unwanted births increases with birth order of the child. More than one out of five (22 percent) of fourth or higher order births was unwanted. Thus, a larger proportion of births to older women are found to be unwanted.

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, Kazakstan 1995

Birth order and mother's age	Planning status of birth			Total	Number of births
	Wanted then	Wanted later	Not wanted		
Birth order					
1	91.7	7.1	1.3	100.0	370
2	81.7	12.5	5.8	100.0	289
3	80.7	5.7	13.6	100.0	144
4+	71.9	6.1	22.0	100.0	149
Age at birth					
<19	85.5	10.8	3.7	100.0	128
20-24	83.5	11.6	4.9	100.0	352
25-29	88.3	4.2	7.5	100.0	260
30-34	80.4	9.5	10.1	100.0	128
35-39	74.9	3.0	22.1	100.0	68
40-44	*	*	*	*	16
Total	83.9	8.4	7.7	100.0	952

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.

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.

As reported ideal family size is so closely correlated with actual family size, there is not much difference between wanted and actual fertility rates in Kazakstan. The wanted fertility rate is only 0.2 children lower than the actual rate, and there are no great 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, Kazakstan 1995

Background characteristic	Total wanted fertility rate	Total fertility rate
Residence		
Urban	1.9	2.0
Rural	2.8	3.1
Region		
Almaty City	(1.4)	(1.5)
South	(3.3)	(3.4)
West	(2.4)	(2.7)
Central	(2.4)	(2.7)
North and East	(1.7)	(1.8)
Education		
Primary/Secondary	2.7	2.9
Secondary-special	2.2	2.4
Higher	(1.9)	(2.0)
Ethnicity		
Kazak	2.9	3.1
Russian	1.6	1.7
Other	(2.2)	(2.4)
Total	2.3	2.5

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

Jeremiah M. Sullivan

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 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 arithmetic 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 1995 KDHS, 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 breathes or shows any other signs of life such as beating of the heart or movement of voluntary muscles. Infant deaths are deaths of live-born infants under one year of age (United Nations, 1992).

The reproductive section of the KDHS 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 of the child, 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 the nonsampling 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. Usually, the most serious source of nonsampling 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); this 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. If there is underreporting of early neonatal deaths, this would result 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.

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 1995 KDHS 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 .49, .44 and .42, respectively. In countries known for having complete and accurate mortality data, at a level of infant mortality of about 40 per 1,000 (the rate estimated for Kazakstan), the value of this ratio is typically between .50 and .60.[1] The ratios for Kazakstan are somewhat lower than this but not greatly so. The value of the ratio is lower for the time periods more distant from the survey date, but the decrease in value is not significant. Accordingly, this inspection of the data does not suggest substantial underreporting of neonatal deaths.

Table 8.1 Infant and child mortality

Infant and child mortality rates by five-year periods preceding the survey, Kazakstan 1995

Years preceding survey	Neonatal mortality (NN)	Postneonatal mortality (PNN)	**Infant mortality** ($_1q_0$)	Child mortality ($_4q_1$)	**Under-five mortality** ($_5q_0$)
0-4	19.5	20.1	39.7	6.1	45.5
5-9	18.5	23.2	41.7	8.8	50.1
10-14	18.6	25.6	44.2	9.8	53.6

8.2 Levels and Trends in Early Childhood Mortality

Table 8.1 shows infant and childhood mortality estimates for 0-4, 5-9, and 10-14 years before the survey. For the period 0-4 years before the survey (i.e., approximately 1990-94), infant mortality was estimated at 40 per 1,000 births. The estimates of neonatal and postneonatal mortality were about equal at 20 per 1,000. The estimate of child mortality (age 1-5 years) was much lower at 6 per 1,000. Overall, for the period 1990-94, under-five mortality was 46 per 1,000.

During the period from 10-14 years to 0-4 years before the survey, infant mortality declined by about 10 percent from 44 per 1,000 to 40 per 1,000 births. All of this decline was in the postneonatal period. The pace of mortality decline was more pronounced for the child age interval (age 1-5 years) and, over the 10-year period, mortality rates fell by about 38 percent from 10 to 6 per 1,000.

The mortality estimates of the KDHS are based on data provided by a sample of 3,771 women and are subject to sampling variability. A result of interest is the 95-percent confidence interval for the estimated infant mortality rate for the period 0-4 years before the survey (40 per 1,000). This confidence interval is broad and extends from 28 to 51 per 1,000 (see Appendix B). Thus, the point estimate of 40 per 1,000 cannot be considered exact and the true rate could be higher or lower. However, the estimates for the time periods 5-9 and 10-14 years before the survey are of the same order of magnitude which tends to substantiate that estimate.

[1] For example, see the neonatal and infant mortality rates for Austria (1959), Canada (1952), and Belgium (1956) in the *U.N. Demographic Yearbook, 1961* and for Cuba (1968), Puerto Rico (1965), and Poland (1966) in the *U.N. Demographic Yearbook, 1974.*

8.3 Mortality Rates from the Ministry of Health

The Republic of Kazakstan has a long history of demographic and health data collection—primarily through the use of registration systems which are designed to collect information on specified events throughout the country. These systems collect data at lower administrative levels and the data are forwarded to the oblast level reporting offices and then to the national statistical agencies of the Government Statistical Office and the Ministry of Health.

In the case of live births and infant deaths, the protocols for data collection were established during the period of the former Soviet Union. Those protocols define live births somewhat differently than the definitions of the World Health Organization which were used in the KDHS. A pregnancy terminating at a gestation age of less than 28 weeks (i.e., weighing less than 1,000 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 breathes, and it is considered a stillbirth if breathing is not evident at the time of delivery. Thus, some events classified as late miscarriages in the Kazakstan statistical system would be classified as live births and infant deaths according to the definitions used in the KDHS.

Official government statistics on infant mortality are published in the annual statistical reports of the Ministry of Health (MOH). The rates of the MOH are also published in the annual statistical reports of the State Committee on Statistics of the Republic of Kazakstan (Goskomstat).[2]

Table 8.2 and Figure 8.1 show infant mortality rates based on MOH and KDHS data for the years 1980-84, 1985-89 and 1990-94. The KDHS rates decline from 44 to 40 per 1,000. The MOH rates decline from 32 to 27 per 1,000. Both sets of rates show a declining trend: 10 percent for the KDHS and 15 percent for the MOH. However, the most important feature of the table is that the MOH rates are consistently about 30 percent lower than the rates from the KDHS.

Table 8.2 Comparison of infant mortality rates

Infant mortality rates, Ministry of Health and KDHS

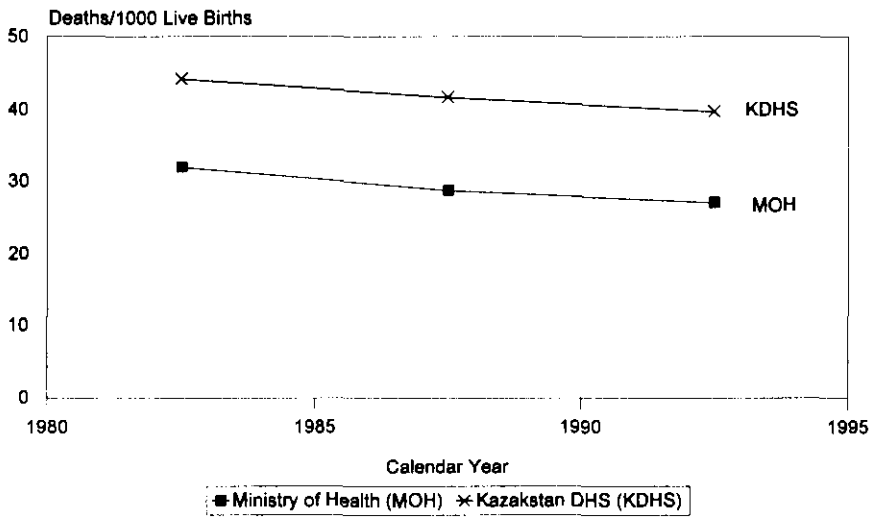
Source	Time period			Percent decline
	1980-84	1985-89	1990-94	
KDHS	44.2	41.7	39.7	10
Ministry of Health	31.9	28.7	27.0	15

Sources: Church and Koutanev (1995) and Ministry of Health (1995)

There is no doubt that the MOH rates would be greater if international definitions of live births and infant deaths were used. Some of the difference between the estimates is due to definition. However, an assessment of the two sets of rates must also consider the sampling variability of the KDHS rates. The lower boundary of the 95-percent confidence interval for the 1990-94 KDHS infant mortality estimate is 28 per 1,000 which is equal to the MOH rate for 1990-94, also 28 per 1,000. Thus, it is not clear to what extent the differences in the two sets of rates are due to definitional differences, sampling variability, or other data collection problems in the KDHS survey or the registration system of the MOH.

[2] It is worth noting that the rates published by the MOH and Goskomstat are shown at the national level and separately for the 19 oblasts of Kazakstan and the municipalities of Almaty and Leninsk.

Figure 8.1
Trends in Infant Mortality



8.4 Socioeconomic Differentials in Childhood Mortality

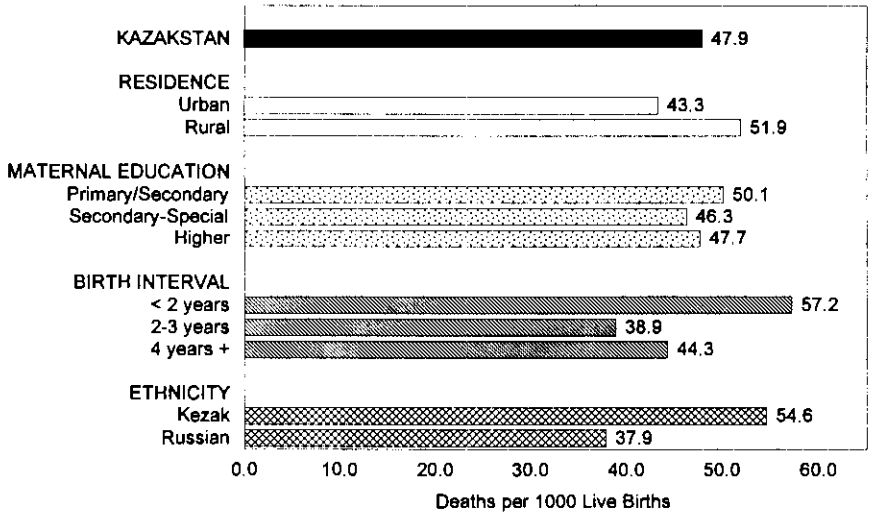
Differentials in infant and child mortality by urban-rural residence, mother's education and mother's ethnic group are shown in Table 8.3 and Figure 8.2. The estimated rates for subgroups of the population are for a 10-year period preceding the survey.

Table 8.3 Infant and child mortality by background characteristics

Infant and child mortality rates for the 10-year period preceding the survey, by selected background characteristics, Kazakstan 1995

Background characteristic	Neonatal mortality (NN)	Postneonatal mortality (PNN)	**Infant mortality** (${}_1q_0$)	Child mortality (${}_4q_1$)	**Under-five mortality** (${}_5q_0$)
Residence					
Urban	26.3	12.9	39.2	4.3	43.3
Rural	13.2	28.9	42.1	10.2	51.9
Education					
Primary/Secondary	18.9	23.2	42.0	8.4	50.1
Secondary-special	18.5	21.9	40.3	6.2	46.3
Higher	20.7	18.4	39.1	8.9	47.7
Ethnicity					
Kazak	15.3	29.7	45.1	10.0	54.6
Russian	29.7	2.9	32.5	5.5	37.9
Other	16.0	22.6	38.7	3.4	42.0
Total	19.0	21.8	40.7	7.4	47.9

Figure 8.2
Under-five Mortality by
Selected Characteristics



Note: Rates refer to a 10-year period preceding the survey

KDHS 1995

Under-five mortality is higher in rural areas (52 per 1,000) than in urban areas (43 per 1,000) and the urban-rural differential is particularly pronounced for child mortality (age 1-4). On the other hand, there is little difference in mortality risks of children born to women with different levels of education. The estimates of infant mortality for children of women with primary/secondary, secondary-special, and higher levels of education are all between 39 and 42 per 1,000. Under-five mortality rates by mother's education cluster between 46 and 50 per 1,000.

The most striking differentials in early childhood mortality are associated with mother's ethnicity. The children of Russian women have the lowest mortality levels, with infant and under-five mortality rates of 33 and 38 per 1,000, respectively. Rates for the children of women of Kazak ethnicity are about 40 percent higher at 45 and 55 per 1,000, respectively. Mortality risks for children of other ethnic groups are intermediate in level.

8.5 Demographic Differentials in Childhood Mortality

The relationship between early childhood mortality and various demographic variables is shown in Table 8.4. As is the case in most populations, male children experience higher mortality than female children. Under-five mortality rates for males and females are 56 and 39 deaths per 1,000 births, respectively.

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

Table 8.4 Infant and child mortality by demographic characteristics

Infant and child mortality rates for the 10-year period preceding the survey, by selected demographic characteristics, Kazakstan 1995

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	24.5	22.2	46.7	10.1	56.3
Female	13.3	21.3	34.6	4.7	39.1
Age of mother at birth					
< 20	(21.4)	(12.3)	(33.6)	(4.1)	(37.6)
20-29	18.4	22.3	40.6	8.6	48.9
30-39	20.4	22.8	43.2	5.0	47.9
40-49	*	*	*	*	*
Birth order					
1	26.5	15.7	42.2	8.8	50.7
2-3	15.9	21.4	37.3	4.1	41.3
4+	12.4	33.1	45.5	12.3	57.2
Previous birth interval					
< 2 yrs	5.9	41.2	47.1	10.6	57.2
2-3 yrs	11.5	21.3	32.8	6.3	38.9
4+ yrs	28.7	12.3	41.0	3.4	44.3
Total	19.0	21.8	40.7	7.4	47.9

Note: Parentheses indicate that the rate is based on 250-499 births. An asterisk indicates that there are fewer than 250 births in this category, and the rate has been suppressed.

A clear association is indicated between mortality risk and the length of the preceding birth interval. The data indicate that births which occur after an interval of less than two years are at greater risk of mortality than births occurring after longer intervals. The risk of infant mortality for births with a birth interval of less than two years is 47 per 1,000, while the risk is 33 per 1,000 for births with an interval of 2-3 years and 41 per 1,000 for births with an interval of four or more years. The relationship between the pace of childbearing and infant mortality suggests that some mortality reduction would result if the proportion of births occurring after a short birth interval were reduced.

8.6 High-Risk Fertility Behavior

Previous research has shown a strong relationship between maternal fertility patterns and 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 the following analysis, a mother is classified as "too young" if she is less than 18 years of age, and "too old" if she is over 34 years of age at the time of delivery. A "short birth interval" is defined by a birth occurring less than two years after the previous birth, and a child is of "high-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 according to these risk categories. The table also shows the relative mortality risks of children by comparing the proportion dead of children in each high-risk category with the proportion dead of children not in any high-

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, Kazakstan 1995

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	31.3	1.0	30.8[b]
Unavoidable risk category			
First birth between ages 18 and 34	35.2	1.7	5.6
Single high-risk category			
Mother's age < 18	3.4	0.0	0.1
Mother's age > 34	3.3	3.1	33.8
Birth interval < 24 months	17.3	0.9	9.8
Birth order > 4	3.0	0.0	2.3
Subtotal	27.0	1.0	46.0
Multiple high-risk category			
Age <18 & birth interval <24[c] months	0.5	0.0	0.0
Age >34 & birth interval <24 months	0.7	7.2	0.6
Age >34 & birth order >4	3.2	1.7	15.1
Age >34 & birth interval <24 & birth order >4	0.3	2.8	0.7
Birth interval <24 & birth order >4	1.8	1.3	1.3
Subtotal	6.6	2.1	17.6
In any high-risk category	33.5	1.2	63.6
Total	100.0	-	100.0
Number of births	1,412	-	2,507

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
[c] Includes the combined categories *Age <18 and birth order >4.*

risk category. First births to women age 18 to 34 are shown separately in Table 8.5, but they are excluded from the analysis of high-risk behavior because they are not considered an avoidable risk.

Column 1 of Table 8.5 shows the prevalence of high-risk births in the five-year period before the survey. Thirty-four percent of births were in at least one high-risk category and 7 percent had multiple high-risk characteristics.

Column 2 of the table shows risk ratios for high-risk births relative to births not having any high-risk characteristics. Overall, the risk ratio for children in a single high-risk category (1.0) is the same as for children in no risk category. However, for children having multiple high-risk characteristics, the risk ratio is clearly elevated (2.1).

Column 3 of Table 8.5 looks to the future and addresses the following question: 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 into the multiple high-risk category of being too old (35 or older) and at risk of having a high-order birth (greater than four).

Overall, 64 percent of currently married women had the potential to give birth to a child with an elevated risk of mortality. Eighteen percent of women had the potential to give birth to a child with multiple high-risk factors.

CHAPTER 9

MATERNAL AND CHILD HEALTH

Amangeldy D. Duisekeev and Temirkhan K. Bekbosynov

This chapter presents findings concerning maternal and child health in Kazakstan. 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

Interviewers recorded in the KDHS questionnaires 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 received care from professional health providers (93 percent); the majority from a doctor (69 percent) and a significant proportion from a nurse or midwife (23 percent). Only 7 percent of women report no antenatal care.

Differences in antenatal care between age groups of women are negligible. Differences by birth order are more pronounced. Mothers are more apt to receive care by a doctor for first births (78 percent) than for births of order four and higher (55 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 (82 percent) than in rural areas (60 percent), and greater in Almaty City (96 percent) and the North and East Region (94 percent) than in the South Region (48 percent). In the South Region, the percent of mothers who receive no antenatal care (14 percent) is several times higher than in any other region.

Mother's education and ethnicity are also associated with antenatal care. More educated women and women of Russian ethnicity are more likely to receive antenatal care and receive care from a doctor than less educated women and women of Kazak or other ethnicity.

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.

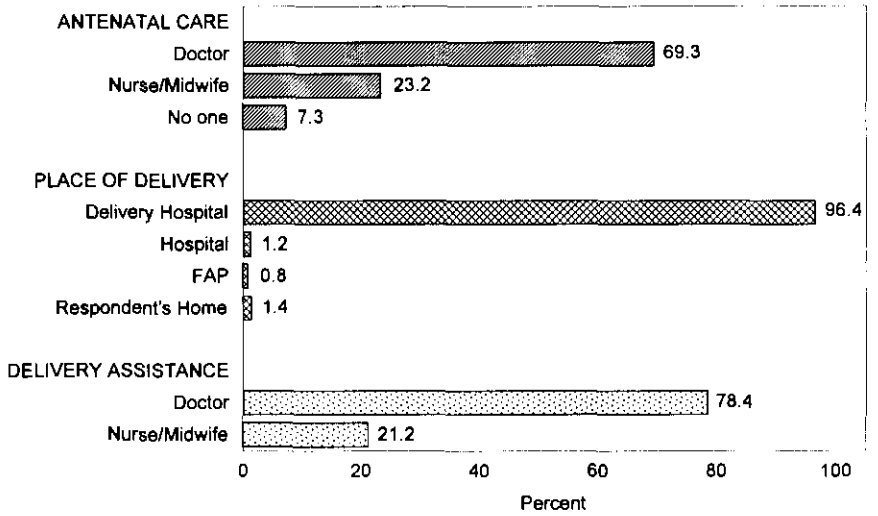
Table 9.1 Antenatal care

Percent distribution of births in the three years preceding the survey by source of antenatal care during pregnancy, according to selected background characteristics, Kazakstan 1995

Background characteristic	Antenatal care provider[1]				Total	Number of births
	Doctor	Nurse/ Trained midwife	Others	No one		
Mother's age at birth						
< 20	78.5	16.5	0.0	5.0	100.0	115
20-34	66.6	25.2	0.1	8.2	100.0	625
35+	78.1	16.8	1.4	3.7	100.0	70
Birth order						
1	78.4	17.4	0.3	3.9	100.0	320
2-3	66.2	24.4	0.0	9.4	100.0	360
4+	55.0	34.4	0.3	10.2	100.0	130
Residence						
Urban	82.2	9.5	0.3	8.0	100.0	343
Rural	59.8	33.3	0.1	6.8	100.0	466
Region						
Almaty City	96.3	0.0	1.2	2.5	100.0	36
South	48.3	37.6	0.0	14.1	100.0	373
West	83.7	13.9	0.0	2.5	100.0	107
Central	69.8	27.4	1.2	1.7	100.0	84
North and East	94.4	4.7	0.0	0.9	100.0	210
Mother's education						
Primary/Secondary	61.0	29.5	0.3	9.1	100.0	293
Secondary-special	70.0	22.7	0.0	7.3	100.0	386
Higher	85.4	10.8	0.3	3.4	100.0	131
Ethnicity						
Kazak	61.2	31.2	0.2	7.4	100.0	487
Russian	92.7	5.4	0.3	1.6	100.0	175
Other	68.2	17.9	0.0	13.8	100.0	148
All births	69.3	23.2	0.2	7.3	100.0	810

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.

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



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

KDHS 1995

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, 32 percent of women have made their first antenatal visit and by the start of the sixth month of pregnancy, 86 percent have made a visit. The median duration of pregnancy for the first antenatal visit is 3.6 months.

Table 9.2 also indicates that 82 percent of women make four or more antenatal care visits. The median number of antenatal care visits is 11. It is clear that in Kazakstan antenatal care is received early in pregnancy and, for most women, it is continued throughout pregnancy.

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, Kazakstan 1995

Characteristic	Percent
Number of visits	
0	7.3
1	1.9
2-3	5.7
4+	81.9
Don't know/missing	3.2
Total	100.0
Median	10.7
Number of months pregnant at time of first visit	
No antenatal care	7.3
<3 months	31.9
3-5 months	53.6
6+ months	6.4
Don't know/missing	0.8
Total	100.0
Median	3.6
Number of births	810

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

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 KDHS 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.

Table 9.3 indicates that virtually all births are delivered at health facilities (98 percent). The great majority of births occur in a

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, Kazakstan 1995

Background characteristic	Place of delivery						Total	Number of births
	Delivery hospital	Hospital	FAP[1]	Respond-ent's home	Other home	Other		
Mother's age at birth								
< 20	98.3	1.7	0.0	0.0	0.0	0.0	100.0	115
20-34	96.1	1.2	0.9	1.5	0.1	0.2	100.0	625
35+	95.4	1.3	0.7	2.7	0.0	0.0	100.0	70
Birth order								
1	97.1	1.9	0.7	0.3	0.0	0.0	100.0	320
2-3	96.9	0.6	0.2	1.8	0.1	0.3	100.0	360
4+	93.1	1.5	2.4	2.6	0.3	0.0	100.0	130
Residence								
Urban	99.2	0.7	0.0	0.0	0.1	0.0	100.0	343
Rural	94.3	1.6	1.3	2.4	0.1	0.2	100.0	466
Region								
Almaty City	97.5	1.2	0.0	0.0	1.2	0.0	100.0	36
South	96.4	0.3	1.2	1.8	0.0	0.3	100.0	373
West	94.5	1.9	0.5	3.2	0.0	0.0	100.0	107
Central	93.8	3.1	1.5	1.0	0.5	0.0	100.0	84
North and East	98.1	1.9	0.0	0.0	0.0	0.0	100.0	210
Mother's education								
Primary/Secondary	94.7	2.2	1.3	1.6	0.1	0.0	100.0	293
Secondary-special	97.8	0.5	0.1	1.3	0.0	0.3	100.0	386
Higher	95.9	1.3	1.5	0.9	0.3	0.0	100.0	131
Ethnicity								
Kazak	94.9	1.4	1.2	2.2	0.1	0.2	100.0	487
Russian	98.1	1.9	0.0	0.0	0.0	0.0	100.0	175
Other	99.1	0.0	0.3	0.3	0.3	0.0	100.0	148
Antenatal care visits								
None	95.4	0.0	0.0	4.6	0.0	0.0	100.0	59
1-3 visits	94.6	1.4	1.4	2.5	0.0	0.0	100.0	62
4 or more visits	96.5	1.4	0.8	0.9	0.1	0.2	100.0	663
Don't know/Missing	98.1	0.0	0.0	1.9	0.0	0.0	100.0	26
All births	96.4	1.2	0.8	1.4	0.1	0.1	100.0	810

Note: Figures are for births in the period 0-35 months preceding the survey.
[1] FAP = Doctor's assistant/midwife post

delivery hospital (96 percent) and another 2 percent in either a general hospital or a FAP (doctor's assistant/midwife post). Only 2 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 94 percent or higher for all population groups.

Table 9.4 indicates that almost all births are delivered under the supervision of persons with medical training—78 percent by a doctor and 21 percent by a nurse or trained midwife.

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, Kazakstan 1995

Background characteristic	Attendant assisting during delivery[1]			Total	Number of births
	Doctor	Nurse/ Trained midwife	Relative/ Other		
Mother's age at birth					
< 20	84.0	16.0	0.0	100.0	115
20-34	76.8	22.7	0.5	100.0	625
35+	83.6	16.4	0.0	100.0	70
Birth order					
1	83.4	16.6	0.0	100.0	320
2-3	77.3	22.1	0.6	100.0	360
4+	69.1	30.0	0.9	100.0	130
Residence					
Urban	89.3	10.7	0.0	100.0	343
Rural	70.3	28.9	0.7	100.0	466
Region					
Almaty City	95.1	4.9	0.0	100.0	36
South	69.5	29.6	0.9	100.0	373
West	88.4	11.6	0.0	100.0	107
Central	68.3	31.7	0.0	100.0	84
North and East	90.4	9.6	0.0	100.0	210
Mother's education					
Primary/Secondary	75.7	24.3	0.0	100.0	293
Secondary-special	77.8	21.6	0.6	100.0	386
Higher	86.0	13.2	0.9	100.0	131
Ethnicity					
Kazak	71.7	27.6	0.7	100.0	487
Russian	90.2	9.8	0.0	100.0	175
Other	86.5	13.5	0.0	100.0	148
Antenatal care visits					
None	53.6	46.4	0.0	100.0	59
1-3 visits	70.6	27.5	1.8	100.0	62
4 or more visits	81.2	18.5	0.3	100.0	663
Total	78.4	21.2	0.4	100.0	810

Note: Figures are for births in the period 0-35 months preceding the survey. Total includes 26 births for which data on antenatal care are missing.
[1] If the respondent mentioned more than one attendant, only the most qualified attendant is considered.

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 (89 percent) than in rural areas (70 percent), and more deliveries are attended by a doctor in Almaty City (95 percent) and the North and East Region (90 percent) than in the South and Central Regions (70 and 68 percent, respectively).

As observed with antenatal care, the likelihood of delivery under a doctor's supervision increases with a woman's educational level and is greater for women of Russian ethnicity (90 percent) than for women of Kazak ethnicity (72 percent).

9.3 Characteristics of Delivery

Respondents were asked in the KDHS if their births 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, 5 percent of births in the three years before the KDHS were delivered by caesarean section. This estimate is consistent with the reported statistic of 5.2 percent of deliveries by caesarean section (Ministry of Health, 1996). 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 Almaty City (19 percent) than among births in the other survey regions (4 to 5 percent).

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, Kazakstan 1995

		Birth weight				Size of child at birth					
Background characteristic	Delivery by C-section	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	Number of births
Age											
<20	2.2	14.4	85.3	0.4	100.0	7.6	18.0	74.4	0.0	100.0	115
20-34	4.8	8.5	89.4	2.1	100.0	8.0	11.0	80.9	0.1	100.0	625
35+	6.9	4.7	92.3	3.0	100.0	8.5	21.2	68.9	1.3	100.0	70
Birth order											
1	4.9	12.8	85.9	1.2	100.0	10.1	15.8	73.9	0.1	100.0	320
2-3	5.4	5.9	92.2	1.9	100.0	6.4	9.3	84.0	0.3	100.0	360
4+	1.8	8.2	88.1	3.6	100.0	7.3	15.3	77.4	0.0	100.0	130
Residence											
Urban	7.2	9.9	88.7	1.4	100.0	8.2	11.8	79.7	0.3	100.0	343
Rural	2.7	8.3	89.4	2.3	100.0	7.9	13.7	78.4	0.1	100.0	466
Region											
Almaty City	18.5	4.9	95.1	0.0	100.0	6.2	11.1	81.5	1.2	100.0	36
South	3.6	8.5	88.8	2.7	100.0	4.4	15.1	80.5	0.0	100.0	373
West	3.9	8.6	89.2	2.2	100.0	6.2	16.2	76.5	1.1	100.0	107
Central	5.1	10.0	86.4	3.6	100.0	14.5	9.6	75.9	0.0	100.0	84
North and East	4.2	10.4	89.6	0.0	100.0	13.0	8.7	78.3	0.0	100.0	210
Mother's education											
Primary/Secondary	1.2	7.1	90.7	2.2	100.0	5.4	15.0	79.5	0.2	100.0	293
Secondary-special	6.4	10.2	88.7	1.2	100.0	9.5	12.2	78.0	0.3	100.0	386
Higher	7.1	9.7	86.8	3.5	100.0	9.5	9.8	80.6	0.0	100.0	131
Ethnicity											
Kazak	4.2	9.1	88.0	2.9	100.0	7.2	12.9	79.7	0.2	100.0	487
Russian	7.1	8.8	91.2	0.0	100.0	12.6	12.5	74.6	0.3	100.0	175
Other	3.1	8.9	90.2	0.9	100.0	5.3	13.2	81.5	0.0	100.0	148
Total	4.6	9.0	89.1	1.9	100.0	8.0	12.9	78.9	0.2	100.0	810

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

Mothers who report that their baby was weighed at birth are able to report the birth weight for 98 percent of all births in the last three years. As Table 9.5 indicates, 9 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.

According to the mother's subjective evaluation of birth size, 8 percent of children are reported as very small at birth and another 13 percent are smaller than average. The percentage of births reported as very small at birth is consistent with the 9 percent of births with a birth weight below 2.5 kilograms.

9.4 Vaccinations

According to guidelines developed by the World Health Organization, 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 by the age of 12 months.

Information on vaccination coverage was collected in the KDHS for all children under three years of age. If the mother was able to show the interviewer a child's health card, the interviewer recorded the information on vaccinations directly from the card. If the mother could not show a health card, she was asked to recall whether or not the child had received vaccines for BCG, polio and DPT (including the number of doses of each), and measles. In Kazakstan, child health cards are maintained at health facilities. Accordingly, the health card was with the mother for only 8 percent of children so that most of the information collected on vaccinations was based on mother's recall. It is important to note that the information reported by mothers was not validated by checking the health cards at the health facilities.

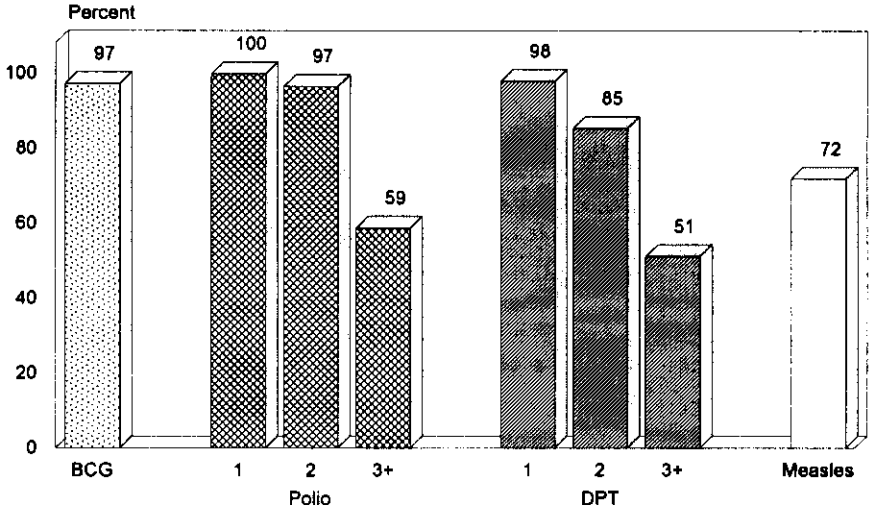
Table 9.6 and Figure 9.2 show rates of vaccination coverage for children 12-23 months of age (i.e., children who should be fully vaccinated). BCG vaccination is usually given in delivery hospitals soon after delivery and is found to be nearly universal (97 percent). A high proportion of children have received the first dose of DPT (98 percent) and polio (100 percent). However, almost half of those who start the DPT and the polio series do not finish. In the case of the measles vaccine, 72 percent of children 12-23 months of age have been vaccinated.

Table 9.6 Vaccinations by source of information

Percentage of children 12-23 months who had received specific vaccines at any time before the survey, by whether the information was from a vaccination card or from the mother, Kazakstan 1995

Source of information	Percentage of children who received:								Percent with vaccination card	Number of children
		DPT			Polio					
	BCG	1	2	3+	1	2	3+	Measles		
Vaccination card	7.3	8.6	9.1	8.7	8.0	8.4	7.0	6.4	8.1	23
Mother's report	89.9	89.3	76.3	42.3	91.9	88.1	51.7	65.5	91.9	257
Either source	97.2	97.9	85.4	51.2	99.8	96.5	58.7	71.9	100.0	280

Figure 9.2
Percentage of Children Age 12-23 Months with Specific Vaccinations



Note: Based on health cards and mothers' reports

KDHS 1995

Table 9.7 shows rates of vaccination coverage for children 12-23 months of age according to selected background characteristics. In general, there is little variation in the level of BCG vaccination coverage between groups of children, which is also observed for the first dose of DPT and polio and for measles. Thus, children classified by gender, birth order, residency or region all have high coverage rates for BCG and the first doses of DPT and polio (94 percent or higher), while coverage rates for the measles vaccine are similar, although at lower levels across population groups.

The most important finding of Table 9.7 is the much greater decrease in coverage between the first and third doses of DPT and polio among children in the rural areas as opposed to the urban areas and in the South Region as opposed to the other regions. For example, DPT coverage dropped from 96 to 74 percent in Almaty City, but dropped from 97 to 37 percent in the South Region.

Table 9.7 Vaccinations by background characteristics

Percentage of children 12-23 months who had received specific vaccines by the time of the survey (according to the vaccination card or the mother's report) and the percentage with a vaccination card, by selected background characteristics, Kazakstan 1995

Background characteristic	Percentage of children who received:								Percent with vaccination card	Number of children
		DPT			Polio					
	BCG	1	2	3+	1	2	3+	Measles		
Sex										
Male	98.3	96.9	82.3	49.2	100.0	95.0	59.8	69.7	7.8	134
Female	96.1	98.8	88.4	53.1	99.7	97.9	57.6	73.8	8.4	145
Birth order										
1	97.3	99.5	92.2	63.8	100.0	97.5	66.0	77.4	13.3	101
2-3	97.9	98.2	85.0	47.0	100.0	97.6	56.1	71.8	4.2	126
4+	95.3	94.4	74.9	40.5	99.2	92.1	50.7	60.8	7.5	52
Residence										
Urban	100.0	97.7	92.6	61.2	99.6	99.1	69.0	75.8	4.6	118
Rural	95.1	98.1	80.0	43.8	100.0	94.7	51.7	69.0	10.7	161
Region										
Almaty City	100.0	96.3	91.3	73.9	96.3	91.3	82.6	76.0	25.0	12
South	95.7	96.9	77.1	36.7	100.0	93.1	47.8	69.3	1.7	133
West	98.7	100.0	89.7	59.0	100.0	100.0	56.6	82.6	3.1	37
Central	94.0	96.3	92.6	71.3	100.0	100.0	59.1	72.0	49.2	29
North and East	100.0	100.0	96.2	63.5	100.0	100.0	74.8	70.3	2.9	68
Mother's education										
Primary/Secondary	99.0	98.9	81.4	42.7	99.6	96.3	52.2	71.1	5.3	113
Secondary-special	95.1	98.0	88.2	54.1	100.0	97.3	60.7	74.7	11.5	115
Higher	97.8	95.4	87.9	63.9	100.0	95.2	68.5	67.4	6.8	51
Ethnicity										
Kazak	96.2	97.9	81.1	47.3	100.0	95.5	49.1	74.1	9.4	167
Russian	100.0	100.0	96.3	60.4	100.0	99.1	85.4	64.3	5.6	57
Other	97.1	95.5	87.3	53.8	99.2	96.9	60.2	73.6	7.0	55
All children	97.2	97.9	85.4	51.2	99.8	96.5	58.7	71.9	8.1	280

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 Kazakstan, over 20 percent of all infant deaths are attributed to ARI (Goskomstat, 1993).

In the KDHS, 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 KDHS 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 May to September, while the peak prevalence of ARI is in mid-winter.

Table 9.8 and Figure 9.3 indicate that 5 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 the prevalence of ARI are most pronounced by age with children 24-35 months of age being twice as likely (8 percent) to have suffered an illness episode than children of any other age group (4 percent each).

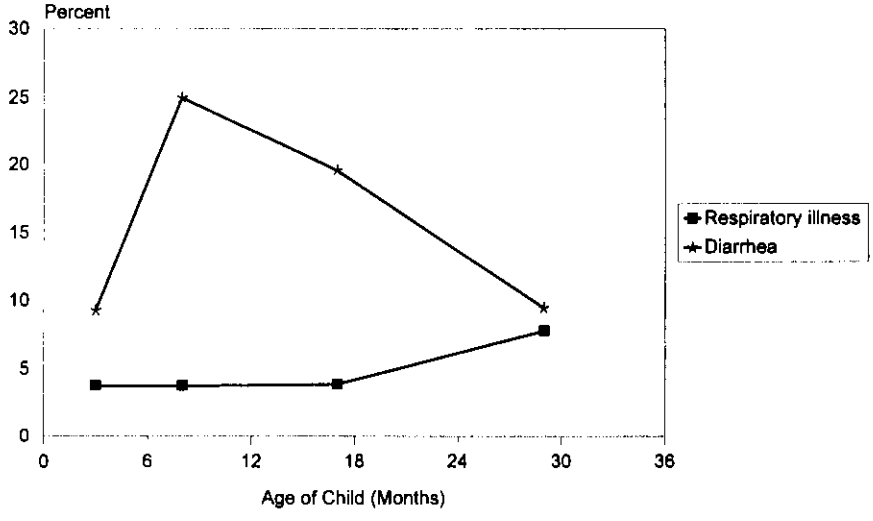
Table 9.8 Prevalence of acute respiratory infection and fever

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, Kazakstan 1995

Background characteristic	Percentage of children with cough and rapid breathing	Percentage of children with a fever	Number of children
Child's age			
< 6 months	3.8	6.4	114
6-11 months	3.8	20.9	132
12-23 months	3.9	10.9	280
24-35 months	7.8	9.3	253
Sex			
Male	7.0	13.4	366
Female	3.5	9.7	413
Birth order			
1	4.1	11.4	308
2-3	6.4	12.5	345
4+	4.0	8.3	126
Residence			
Urban	7.0	13.1	334
Rural	3.7	10.2	445
Region			
Almaty City	11.7	14.3	34
South	3.0	10.6	358
West	3.3	12.8	101
Central	6.6	11.9	82
North and East	8.1	11.5	204
Education			
Primary/Secondary	3.0	9.0	281
Secondary-special	7.6	12.8	370
Higher	2.8	12.8	128
Ethnicity			
Kazak	4.4	12.3	464
Russian	7.7	11.5	171
Other	4.6	8.5	144
All children	5.1	11.4	779

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



KDHS 1995

Differentials in ARI also exist according to sex of child, area of residence, education, and ethnicity. 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.

Overall, 48 percent of children with ARI were taken to a health facility or health provider for treatment. (Because of the relatively small number of reported cases of ARI, data on treatment are not shown.)

9.6 Fever

Table 9.8 also shows that 11 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 age with children 6-11 months of age being twice as likely to have had a fever than children of any other age group.

9.7 Diarrhea

Dehydration caused by severe diarrhea is a major cause of morbidity among young children. In Kazakstan, over 11 percent of all infant deaths are attributed to diarrhea (Goskomstat, 1993).

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 Kazakstan 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 (82 percent). However, a surprisingly high proportion of women indicated that it is appropriate to reduce the amount of liquid offered to a child with diarrhea (26 percent).

Mothers were also asked if their children had an episode of diarrhea in the last two weeks and, if so, whether there was blood in the stools, whether Rehydron or any other treatment was given in response to the diarrhea, and whether fluid intake was increased or decreased. The results of these questions are presented in Tables 9.10-9.12.

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, Kazakstan 1995

Background characteristic	Percent who know Rehydron	Quantities that should be given during diarrhea: Liquids Less	Same	More	Don't know/ Missing	Total	Solid foods Less	Same	More	Don't know/ Missing	Total	Number of mothers
Age												
15-19	45.0	23.9	35.0	25.7	15.3	100.0	35.7	48.2	1.0	15.1	100.0	45
20-24	79.0	30.0	28.8	31.4	9.8	100.0	56.8	34.2	2.1	6.9	100.0	240
25-29	91.1	24.9	18.8	54.8	1.6	100.0	68.8	27.1	1.9	2.3	100.0	201
30-34	86.2	20.7	17.6	56.3	5.5	100.0	70.4	24.7	1.6	3.2	100.0	127
35+	80.7	25.0	20.0	49.7	5.3	100.0	68.6	26.8	0.8	3.9	100.0	89
Residence												
Urban	79.8	19.7	20.4	53.0	6.9	100.0	64.3	28.7	1.2	5.8	100.0	306
Rural	83.3	30.5	25.4	38.0	6.1	100.0	61.7	31.7	2.1	4.5	100.0	396
Region												
Almaty City	78.4	12.2	25.7	52.7	9.5	100.0	66.2	24.3	4.1	5.4	100.0	33
South	90.0	25.0	24.6	43.8	6.6	100.0	63.6	29.8	2.0	4.6	100.0	316
West	91.0	23.8	18.8	53.2	4.2	100.0	75.4	20.4	1.8	2.5	100.0	93
Central	86.4	31.9	13.6	44.5	10.0	100.0	61.9	28.2	1.2	8.7	100.0	73
North and East	62.0	28.2	26.3	40.1	5.4	100.0	55.1	38.3	1.0	5.6	100.0	187
Mother's education												
Primary/Secondary	77.7	37.9	22.2	32.4	7.5	100.0	64.2	28.7	2.5	4.6	100.0	252
Secondary-special	82.6	20.0	25.3	48.1	6.6	100.0	58.5	34.3	1.1	6.1	100.0	333
Higher	88.2	16.3	19.5	60.5	3.7	100.0	72.3	22.9	1.7	3.1	100.0	116
Ethnicity												
Kazak	87.8	23.0	25.3	45.1	6.6	100.0	66.3	28.4	1.3	4.0	100.0	407
Russian	71.9	24.5	26.2	42.1	7.3	100.0	56.7	32.6	1.4	9.2	100.0	166
Other	75.2	36.4	12.7	46.0	4.9	100.0	59.6	33.8	3.4	3.2	100.0	129
All mothers	81.8	25.8	23.2	44.5	6.5	100.0	62.8	30.4	1.7	5.1	100.0	702

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, Kazakstan 1995

Background characteristic	Diarrhea in the preceding 2 weeks		Number of children
	All diarrhea	Diarrhea with blood	
Child's age			
< 6 months	9.3	0.4	114
6-11 months	25.0	1.3	132
12-23 months	19.6	0.8	280
24-35 months	9.5	0.0	253
Sex			
Male	17.1	0.1	366
Female	14.5	1.0	413
Birth order			
1	17.3	0.7	308
2-3	15.2	0.7	345
4+	13.6	0.0	126
Residence			
Urban	15.0	0.9	334
Rural	16.3	0.4	445
Region			
Almaty City	9.1	0.0	34
South	12.9	0.8	358
West	11.8	1.1	101
Central	16.9	0.7	82
North and East	23.3	0.0	204
Mother's education			
Primary/Secondary	11.4	0.2	281
Secondary-special	18.9	1.1	370
Higher	16.3	0.0	128
Ethnicity			
Kazak	16.2	1.0	464
Russian	18.8	0.0	171
Other	10.7	0.0	144
All children	15.7	0.6	779

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

Table 9.10 and Figure 9.3 indicate that 16 percent of children under three had experienced diarrhea and that 1 percent had blood with the diarrhea. The age pattern of diarrhea shows a peak in late infancy of 6-11 months (i.e., around the time when a child begins to crawl and experience more exposure to the environment). The prevalence of diarrhea is lowest among children under 6 months of age (9 percent), increases to a peak among children ages 6-11 months (25 percent), remains high at 12-23 months (20 percent) and declines at 24-35 months of age (10 percent).

Table 9.10 also indicates that region is associated with the most pronounced differentials in diarrhea. Children in Almaty City are least likely to have diarrhea (9 percent), while children in the Central and the North and East Regions are most likely to have diarrhea (17 and 23 percent, respectively).

Table 9.11 shows the treatment received by children who had diarrhea in the last two weeks. Twenty-six percent of children with diarrhea were taken to a health facility or health provider for treatment. In terms of other treatments, 28 percent of children received Rehydron and 4 percent received a homemade sugar-salt-water solution, so that 31 percent received some type of ORT. Overall, increased fluids were used to treat 40 percent of children with diarrhea.

Table 9.12 summarizes the feeding practices which mothers followed when children had diarrhea. Eighty-five percent of children were given fluids in either the same or increased amounts while 14 percent were given reduced amounts of fluids.

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, Kazakstan 1995

Treatments received	Percentage
Taken to a health facility or provider[1]	25.8
Received oral rehydration therapy	
Rehydron	28.2
Home sugar-salt-water solution	3.9
Either	31.2
Received increased fluids	39.6
Neither Rehydron, home sugar-salt-water solution nor increased fluids	46.7
Number of children	123

[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, Kazakstan 1995

Feeding practices	Total
Amount of solid foods	
Same	42.1
Increase	0.8
Decrease	57.1
Amount of fluids	
Same	45.8
Increase	39.6
Decrease	14.2
Don't know/Missing	0.4
Total	100.0
Number of children	123

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

CHAPTER 10

NUTRITION OF WOMEN AND CHILDREN

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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 1995 KDHS, 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 by background characteristics of mothers.

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 Kazakstan; 96 percent of children born in the three years preceding the survey were breastfed. Overall, 10 percent of children were breastfed within an hour of delivery and 40 percent within 24 hours of delivery.

There was no significant variation between population groups in the percent 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 urban women (12 percent) than rural women (7 percent) and in Almaty City (15 percent) and the North and East Region (19 percent) than in other regions of the country. The most pronounced differentials in the initiation of breastfeeding were by mother's ethnicity. Breastfeeding was more likely within an hour of delivery among Russian women (17 percent) than among Kazak women (6 percent) and this differential was maintained at 24 hours of delivery (60 and 33 percent, respectively). It appears that more rapid initiation of breastfeeding following delivery would benefit many children in Kazakstan and would be particularly beneficial to Kazak children.

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, Kazakstan 1995

Background characteristic	Percentage ever breastfed	Among last-born children, percentage who started breastfeeding: Within 1 hour of birth	Within 1 day of birth[1]	Number of children
Sex				
Male	95.1	9.8	37.9	390
Female	96.0	9.3	41.5	419
Residence				
Urban	96.4	12.4	40.5	343
Rural	95.0	7.4	39.2	466
Region				
Almaty City	92.6	14.7	32.0	36
South	96.8	4.7	28.6	373
West	96.9	8.5	42.2	107
Central	93.3	6.4	49.9	84
North and East	94.1	19.3	56.1	210
Mother's education				
Primary/Secondary	94.7	11.3	42.4	293
Secondary-special	96.0	7.8	36.7	386
Higher	96.4	10.7	43.0	131
Ethnicity				
Kazak	96.1	6.3	33.0	487
Russian	94.0	17.2	60.1	175
All children	95.6	9.5	39.8	810

[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 the nutrients needed by children in the 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 breastfeeding status of children by age in months. As can be seen, a high proportion of children are breastfed in Kazakstan. At 0-3 months of age, 88 percent of children are breastfed and at 8-11 months of age, 73 percent are still breastfed. This falls to 21 percent by 20-23 months of age and 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, Kazakstan 1995

Age in months	Percentage of living children who are: Not breast-feeding	Exclusively breast-fed	Breastfeeding and: Plain water only	Supple-ments	Total	Number of living children
0-3	11.8	12.3	24.3	51.6	100.0	74
4-7	30.3	3.4	2.5	63.8	100.0	89
8-11	26.7	0.6	0.0	72.7	100.0	84
12-15	47.1	0.0	0.0	52.9	100.0	98
16-19	72.9	0.0	0.0	27.1	100.0	83
20-23	79.3	0.0	0.0	20.7	100.0	99
24-27	91.0	0.0	0.0	9.0	100.0	89
28-31	91.7	0.0	0.0	8.3	100.0	77
32-35	100.0	0.0	0.0	0.0	100.0	87
0-3 months	11.8	12.3	24.3	51.6	100.0	74
4-6 months	28.7	2.9	3.5	64.9	100.0	64
7-9 months	37.4	2.5	0.0	60.1	100.0	64

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 Kazakstan. Exclusive breastfeeding during early infancy, as recommended by the World Health Organization,[1] is not common. At ages 0-3 months, only 12 percent of children were exclusively breastfed. During these early months of infancy, most breastfed children receive either plain water (24 percent) or other foods and liquids (52 percent).

Table 10.3 shows information on the median duration of breastfeeding. For all of Kazakstan, the median duration of any breastfeeding is lengthy (14 months) but the duration of exclusive and full breastfeeding (breastfeeding plus plain water) are short (0.4 and 0.7 months, respectively).

The most pronounced differentials in breastfeeding are by region and ethnicity. The median duration of any breastfeeding is longer in the South, West, and Central Regions (14-15 months) than in Almaty City (9 months) or in the North and East Region (5 months). The median duration of any breastfeeding is longer for Kazak women (15 months) than for Russian women (6 months).

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

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, according to background characteristics, Kazakstan 1995

Background characteristic	Median duration in months[1]			Number of children under 3 years of age
	Any breast-feeding	Exclusive breast-feeding	Full breast-feeding[2]	
Sex				
Male	13.5	0.5	1.0	390
Female	14.5	0.4	0.6	419
Residence				
Urban	13.0	0.4	1.1	343
Rural	14.3	0.5	0.6	466
Region				
Almaty City	8.5	0.5	0.8	36
South	13.8	0.4	1.3	373
West	14.6	0.6	3.1	107
Central	14.6	0.6	1.6	84
North and East	4.8	0.4	0.5	210
Mother's education				
Primary/Secondary	14.9	0.5	0.6	293
Secondary-special	14.3	0.4	1.2	386
Higher	5.8	0.4	0.6	131
Ethnicity				
Kazak	14.8	0.5	1.8	487
Russian	6.2	0.4	0.5	175
Other	6.5	0.5	0.5	148
Total	13.9	0.4	0.7	810
Mean	13.7	1.3	2.3	-
Prevalence/Incidence[3]	13.0	0.6	1.4	-

[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 KDHS, mothers were asked about the types of foods that were given to children in the 24 hours preceding the survey. The foods given to a child are 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 foods given to children according to breastfeeding status. Among children 0-3 months of age who are breastfeeding, infant formula was commonly used to supplement breast milk (20 percent) as well as powdered and evaporated milk (17 percent). Tea is especially popular in Kazakstan and was given in the last 24 hours to 21 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. Twenty-five percent of breastfeeding infants age 4-7 months receive these foods. Cereals and fruits and vegetables were also commonly given to infants who are breastfeeding; over 45 percent of infants 4-7 months of age were given these foods in the 24 hours before the survey interview.

Table 10.4 Types of foods 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, Kazakstan 1995

Age (in months)	Breast milk only	Infant formula	Powdered/ evapo-rated milk	Fer-mented milk products[1]	Juice	Tea	Other liquids	Poultry/ fish/ eggs/ meat	Grain/ flour/ cereal	Tubers/ potatoes	Fruit/ vege-tables	Sweets/ choco-late	Using bottle with a nipple	Number of children
BREASTFEEDING CHILDREN														
0-3	13.9	19.6	17.3	0.7	14.4	21.2	21.7	0.0	0.7	0.0	1.7	3.5	64.9	65
4-7	4.9	14.8	49.3	20.3	18.9	68.4	36.5	25.0	49.1	34.2	46.5	23.9	41.9	62
8-11	0.8	6.8	71.8	30.3	15.3	93.6	63.0	52.4	93.0	52.7	69.3	49.4	24.2	61
0-11	6.7	13.9	45.6	16.8	16.2	60.3	40.0	25.3	46.7	28.4	38.4	25.2	44.1	188
12-23	0.0	5.4	72.3	42.4	26.1	98.3	76.4	67.7	94.2	65.7	75.6	60.4	15.4	95
Total	4.2	10.7	55.0	25.8	19.5	74.3	52.7	41.7	63.5	41.8	52.5	38.3	33.4	297
NON-BREASTFEEDING CHILDREN														
0-11	NA	32.0	84.4	14.6	36.8	54.2	66.7	48.6	63.6	46.1	49.6	24.7	87.2	58
12-23	NA	9.5	84.6	41.7	24.2	90.4	74.3	82.9	94.5	69.8	83.8	73.4	29.6	185
24-29	NA	4.0	68.8	35.9	31.7	87.1	68.8	78.8	88.4	67.5	79.3	68.8	10.8	123
30-35	NA	5.3	81.8	42.3	25.9	97.0	79.0	84.3	95.9	60.3	76.6	82.8	6.1	116
Total	NA	9.8	79.8	37.1	28.1	86.8	74.0	78.1	89.6	64.1	76.8	68.7	26.0	482

[1] Kefir, airan, kumys and yogurt
NA = Not applicable

A relatively high percentage of children still being breastfed were also fed using a bottle with a nipple: 65 percent at age 0-3 months and 42 percent at 4-7 months of age.

Among non-breastfeeding children, a high proportion at all ages receive powdered or evaporated milk (about 80 percent). Also, a high proportion receive high protein foods (poultry, fish, meat, or eggs) after the first birthday (about 80 percent of children).

10.1.4 Frequency of Food Supplementation

The nutrition requirements of young children are more likely to be met if they are fed a variety of foods. In the KDHS, interviewers read a list of specific foods and asked the mother to report the number of days during the last seven days that the child received each food.

Table 10.5 shows the percentage of children who received specific foods in the last seven days by age and breastfeeding status. At 0-3 months of age, a high percentage of breastfeeding infants received plain water (83 percent). Milk products were given to a smaller proportion of breastfeeding children 0-3 months old (21 percent). Poultry, eggs, fish and meat were only given to children over four months of age. Grains/cereals and fruits/vegetables were received by a significant proportion of children after four months of age (50 percent or more).

As expected, a high percentage of non-breastfeeding children were given plain water and milk products at all ages (approximately 90 percent).

Table 10.5 Types of food received by children in preceding week

Percentage of children under 36 months of age who received specific types of food in the seven days preceding the interview, by breastfeeding status and age of the child in months, Kazakstan 1995

Age (in months)	Water	Milk and milk products	Other liquids	Poultry/ eggs/ fish	Meat	Grains/ flour/ cereal	Tubers/ potatoes	Fruits/ vegetables	Number of children
BREASTFEEDING CHILDREN									
0-3	82.8	21.3	20.8	0.0	0.0	0.7	0.0	1.7	65
4-7	93.9	67.6	63.6	32.6	32.8	61.4	50.3	63.7	62
8-11	89.5	90.3	92.6	54.6	69.0	97.6	84.8	78.2	61
0-11	88.6	59.0	58.3	28.5	33.2	52.2	44.2	47.0	188
12-23	93.9	95.6	98.0	64.6	85.8	100.0	91.4	91.4	95
Total	90.8	70.9	71.8	42.1	52.6	69.2	61.2	63.1	297
NON-BREASTFEEDING CHILDREN									
0-11	92.8	89.3	73.5	52.0	42.2	72.7	64.9	65.5	58
12-23	96.1	95.0	96.4	74.8	91.5	97.6	89.8	93.6	185
24-29	88.2	90.2	93.5	68.4	83.3	94.4	87.6	88.9	123
30-35	97.8	95.5	95.7	80.8	93.5	97.8	89.2	94.1	116
Total	94.1	93.2	92.7	71.9	84.0	93.8	86.1	89.2	482

10.1.5 Differentials in Food Supplementation

Table 10.6 shows the percentage of children who received specific kinds of foods during the last seven days and, during that period, the mean number of days that each food type was received by background characteristics. Overall, the table indicates that a high proportion of children received each food type (above

Table 10.6 Types of food received by children by background characteristics

Percentage of children under 36 months of age who received specific types of food in the seven days preceding the interview, and the mean number of days children were fed these foods, by selected background characteristics, Kazakstan 1995

Background characteristics	Water		Milk and milk products		Other liquids		Poultry/ eggs/fish		Meat		Grains/ flour/cereal		Tubers/ potatoes		Fruits/ vegetables		Iodized salt in house-hold	Number of children
	Percent	Mean	Percent	Mean	Percent	Mean	Percent	Mean	Percent	Mean	Percent	Mean	Percent	Mean	Percent	Mean		
Sex of child																		
Male	93.5	6.7	86.2	6.3	85.6	5.4	57.9	2.9	72.1	5.5	85.0	6.6	75.0	5.0	78.3	5.6	48.2	366
Female	92.3	6.7	83.4	6.0	84.0	5.4	62.8	3.3	71.9	5.4	84.0	6.6	78.1	5.0	80.0	5.9	47.4	413
Residence																		
Urban	92.8	6.8	82.3	6.0	84.4	5.5	63.8	3.2	70.2	5.4	83.2	6.6	80.7	5.4	82.6	5.8	51.7	334
Rural	92.9	6.6	86.5	6.2	85.0	5.3	58.1	3.0	73.4	5.4	85.4	6.6	73.6	4.7	76.7	5.7	44.9	445
Region																		
Almaty	87.0	6.8	83.1	6.2	87.0	5.7	66.2	3.6	70.1	5.7	76.6	6.6	77.9	5.9	80.5	5.2	71.4	34
South	93.8	6.7	84.1	6.3	83.4	5.2	51.9	2.6	71.1	5.6	85.5	6.5	78.4	4.4	80.9	6.3	35.3	358
West	93.9	6.7	82.8	6.2	77.1	4.9	59.3	3.4	70.5	5.2	84.0	6.6	68.6	4.5	73.4	5.1	88.7	101
Central	89.5	6.5	83.8	6.1	83.8	5.3	55.6	3.1	73.5	5.2	80.7	6.9	63.3	5.2	69.4	5.0	30.2	82
North and East	93.0	6.7	87.4	5.8	90.9	5.9	77.3	3.5	74.1	5.3	85.6	6.7	82.6	5.8	82.9	5.6	52.4	204
Education																		
Primary/ Secondary	93.3	6.6	85.4	6.1	83.3	5.3	54.3	3.2	72.9	5.3	83.9	6.5	74.6	4.8	77.5	5.7	45.6	281
Secondary-special	93.1	6.7	85.3	6.2	86.5	5.4	64.6	3.0	70.5	5.5	85.5	6.6	77.8	5.0	80.0	5.7	44.1	370
Higher	91.2	6.8	81.4	6.2	82.8	5.6	62.5	3.3	74.4	5.6	82.5	6.8	77.7	5.4	80.9	6.0	63.2	128
Ethnicity																		
Kazak	90.9	6.6	83.7	6.2	82.6	5.0	53.1	2.7	71.6	5.6	85.2	6.7	72.6	4.4	76.2	5.7	49.1	464
Russian	97.4	6.8	85.7	5.9	87.6	5.8	70.0	3.5	68.0	5.1	78.8	6.5	79.7	5.9	83.7	5.7	47.6	171
Other	94.0	6.8	86.8	6.1	88.5	6.0	73.3	3.5	78.3	5.3	88.7	6.6	85.8	5.5	83.8	6.0	43.7	144
Total	92.9	6.7	84.7	6.1	84.8	5.4	60.5	3.1	72.0	5.4	84.4	6.6	76.6	5.0	79.2	5.8	47.8	779

70 percent except in the case of poultry, eggs, and fish) and that those foods were received frequently (five or more days except in the case of poultry, eggs, and fish). Even meat, which contains high amounts of protein needed by growing children, was frequently given to children.

The data indicate only modest variation in feeding patterns by sex of the child, residence, region, education, and ethnicity. Table 10.6 also indicates that about half of the children (48 percent) live in households where iodized salt is available.

10.2 Nutritional Status of Children under Age Three

The data on height and weight of children in the KDHS 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 (-2SD) 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 (-3SD) 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 (-2SD) 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 (-3SD) 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 (-2SD) of the median of the reference population on these nutritional indices (i.e., will be classified as moderately or severely undernourished).

In the survey, all surviving children born since January 1992 were eligible for height and weight measurement. Of the 779 children under three years of age at the time of the survey, plausible values for height and weight were obtained for 717 children (92 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 717 children, age 0-35 months, for whom complete and plausible anthropometric data were collected.

10.2.2 Levels of Child Undernutrition in Kazakstan

Table 10.7 shows the percentage of children under three years of age classified as undernourished according to demographic characteristics. For all of Kazakstan, 16 percent of children are moderately or severely stunted, 3 percent are moderately or severely wasted, and 8 percent are moderately or severely underweight for age.

In terms of demographic characteristics, the most pronounced differentials are found by age and birth interval. Children age 12-23 months and 24-35 months are less well-nourished than infants by almost all indices of undernutrition. Children born after a birth interval of less than 24 months are generally less well-nourished than children born after longer birth intervals. 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 (23 percent) and those born within a birth interval of less than 24 months (28 percent).

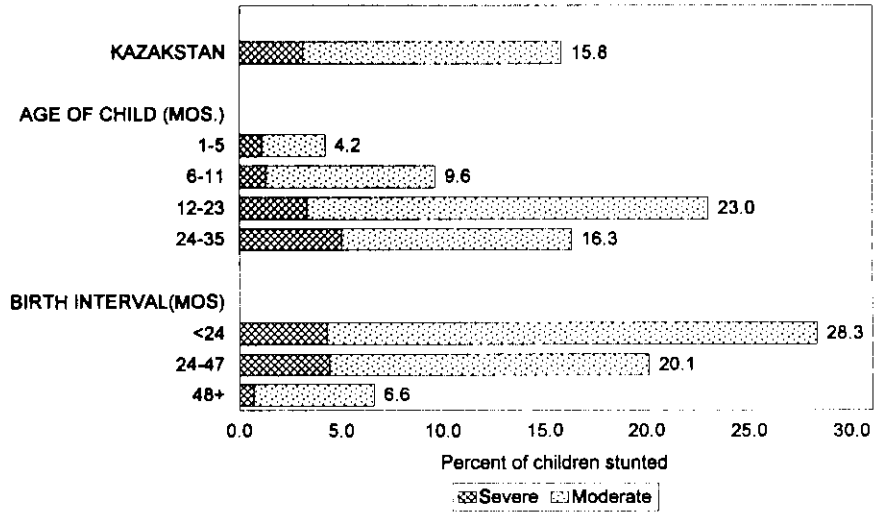
Table 10.7 Nutritional status of children by demographic characteristics

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, Kazakstan 1995

	Height-for-age		Weight-for-height		Weight-for-age		
Demographic characteristic	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
Age							
<6 months	1.1	4.2	0.0	2.1	0.0	1.6	106
6-11 months	1.3	9.6	0.0	3.5	0.9	5.1	124
12-23 months	3.3	23.0	1.5	4.1	1.9	11.1	262
24-35 months	5.0	16.3	0.3	2.7	2.0	10.0	224
Sex							
Male	4.4	17.8	0.7	4.4	1.7	10.3	330
Female	2.0	14.1	0.6	2.3	1.3	6.6	387
Birth order							
1	3.1	11.8	0.0	2.0	0.0	5.2	275
2-3	3.3	17.0	1.2	3.3	2.3	10.3	327
4+	2.9	22.0	0.4	6.3	2.9	10.1	115
Birth interval[2]							
< 24 months	4.3	28.3	2.5	4.9	4.1	15.5	135
24-47 months	4.4	20.1	0.3	3.0	2.7	8.6	166
48+ months	0.7	6.6	0.5	4.7	0.5	7.3	139
Total	3.1	15.8	0.6	3.3	1.5	8.3	717

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

Figure 10.1
Prevalence of Stunting by Age
of Child and Length of Birth Interval



KDHS 1995

Table 10.8 shows nutritional indices by background characteristics. In terms of almost all indices, children in the urban areas suffer less undernutrition than children in rural areas. Similarly, children in Almaty City and in the North and East Region suffer less undernutrition than children in the South and Central 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 (22 percent), those in the South and Central Regions (23 and 22 percent, respectively), those born to women with a primary/secondary education (20 percent) and those born to women of Kazak ethnicity (21 percent).

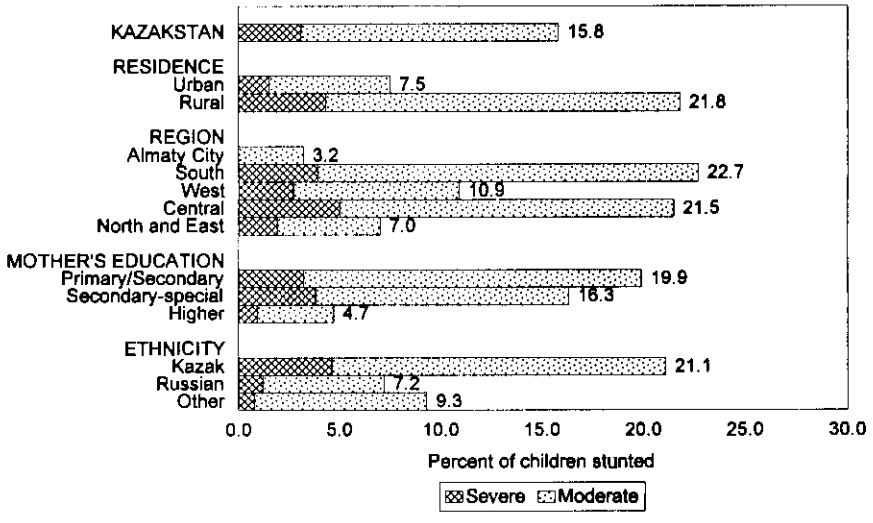
Table 10.8 Nutritional status of children by background characteristics

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, Kazakstan 1995

Background 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]	
Residence							
Urban	1.5	7.5	1.4	3.7	0.8	7.9	300
Rural	4.3	21.8	0.1	3.0	2.0	8.6	416
Region							
Almaty City	0.0	3.2	0.0	1.6	0.0	6.5	27
South	3.9	22.7	1.1	5.9	1.9	11.0	318
West	2.7	10.9	1.2	3.7	1.7	6.7	95
Central	5.0	21.5	0.0	1.2	1.2	8.4	72
North and East	1.9	7.0	0.0	0.0	1.0	5.1	204
Mother's education							
Primary/Secondary	3.2	19.9	0.8	4.5	1.7	9.3	262
Secondary-special	3.8	16.3	0.2	2.9	1.8	9.0	343
Higher	0.9	4.7	1.5	1.5	0.0	3.8	112
Ethnicity							
Kazak	4.6	21.1	0.7	3.6	1.8	10.3	421
Russian	1.2	7.2	1.1	1.7	1.2	4.3	161
Other	0.8	9.3	0.0	4.0	0.8	6.8	135
Total	3.1	15.8	0.6	3.3	1.5	8.3	717

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



KDHS 1995

10.3 Women's Anthropometric Status

In the KDHS, data were collected on the height and weight of 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.

A woman's height is associated with past socio-economic 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 140-150 centimeters.

Table 10.9 shows the percent distribution of women by height. The mean height of women is 159 cm. Less than 1 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 squared height (in meters). A cutoff point of 18.5 kg/m^2 has been recommended for defining energy deficiency among nonpregnant women. Table 10.9 indicates that the mean BMI among nonpregnant, weighed and measured women[3] is 24.8, with 8 percent having a BMI below 18.5 kg/m^2.

Table 10.10 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 kg/m^2. Women in the 15-19 age group, those residing in the West Region, those with primary/secondary education, and Kazak women are more likely to have a low BMI value than other women.

Table 10.9 Anthropometric indicators of female nutritional status

Percent distribution and mean and standard deviation for all women by height and body mass index (BMI), Kazakstan 1995

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	0.8	0.8
145.0-149.9	5.3	5.2
150.0-154.9	18.1	17.7
155.0-159.9	31.9	31.3
160.0-164.9	28.0	27.5
165.0-169.9	12.5	12.2
170.0-174.9	2.7	2.7
175.0-179.9	0.8	0.8
Missing	-	1.8
Total	100.0	100.0
Mean	159.0	-
Standard deviation	6.0	-
Number of women	3,704	3,771
BMI (kg/m^2)		
12.0-15.9	0.6	0.6
16.0-16.9	1.2	1.2
17.0-18.4	6.1	5.9
18.5-20.4	14.9	14.6
20.5-22.9	23.2	22.7
23.0-24.9	15.6	15.2
25.0-26.9	9.8	9.6
27.0-28.9	8.8	8.6
29.0-29.9	3.3	3.2
30.0-31.9	5.5	5.4
32.0-33.9	3.6	3.5
34.0-35.9	3.0	3.0
36.0-37.9	1.3	1.3
38.0-39.9	1.3	1.3
≥40.0	1.8	1.8
Missing	-	2.1
Total	100.0	100.0
Mean	24.8	-
Standard deviation	5.7	-
Number of women	3,518	3,594

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, necessary for adjustments, were not available.

Table 10.10 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, Kazakstan 1995

Background characteristic	Height			Body Mass Index					
					Percent distribution				
	Mean	Percent <145 cm	Number	Mean	<18.5	18.5-29.9	≥ 30.0	Total	Number
Age									
15-19	159.6	0.7	657	21.7	16.8	80.2	3.0	100.0	638
20-24	159.4	0.7	558	22.4	9.8	84.8	5.4	100.0	494
25-29	160.0	1.0	515	23.2	11.4	80.8	7.8	100.0	460
30-34	158.9	1.0	543	24.8	7.9	78.1	14.0	100.0	522
35-49	158.3	0.9	1,431	27.6	1.9	67.2	30.8	100.0	1,412
Residence									
Urban	160.0	0.6	2,079	25.0	7.3	75.0	17.6	100.0	2,018
Rural	157.8	1.2	1,625	24.5	8.5	75.9	15.6	100.0	1,507
Region									
Almaty City	161.3	0.3	258	24.7	6.1	78.7	15.2	100.0	252
South	158.2	0.9	1,182	24.0	8.4	79.3	12.3	100.0	1,096
West	158.4	1.8	461	24.0	10.6	77.1	12.3	100.0	437
Central	158.4	1.1	354	24.7	8.7	75.1	16.2	100.0	341
North and East	159.7	0.5	1,449	25.7	6.7	71.3	22.0	100.0	1,400
Mother's education									
Primary/Secondary	158.3	1.6	1,352	24.4	10.0	74.7	15.3	100.0	1,290
Secondary-special	159.1	0.5	1,693	25.3	6.6	74.3	19.1	100.0	1,611
Higher	160.3	.0.1	658	24.3	6.7	79.7	13.6	100.0	625
Ethnicity									
Kazak	157.5	1.0	1,660	23.5	11.0	78.1	10.9	100.0	1,564
Russian	160.8	0.5	1,289	25.7	5.2	74.1	20.7	100.0	1,245
Other	159.3	1.0	754	26.0	5.7	71.8	22.5	100.0	716
Total	159.0	0.8	3,704	24.8	7.9	75.4	16.7	100.0	3,525

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

CHAPTER 11

ANEMIA

Almaz T. Sharmanov

11.1 Introduction

Anemia is a condition which is characterized by 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 or 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 to non-anemic 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 hemorrhage occurs. This may be an underlying cause of maternal death, and prenatal and perinatal infant loss (Fleming, 1987; Omar et al., 1994; Thonneau et al., 1992). Iron deficiency anemia among children has been demonstrated in many studies 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 Kazakstan for decades. According to the 1988 nutrition survey conducted by the Nutrition Institute in four regions of Kazakstan, 60 percent of nonpregnant and non-lactating women and 60 to 80 percent of pregnant women were diagnosed as having anemia based on hemoglobin and hematocrit measurement (Izmukhambetov, 1990). A study conducted in 1993 by the Crosslink Group in Muynak District of adjoining Uzbekistan, found anemia levels of over 60 percent for women of reproductive age and approximately 80 percent for children under the age of three (Morse, 1994). Because of correspondingly low serum levels of iron and ferritin, iron deficiency was recognized as the major cause of anemia among women and young children in that area. In a July 1994 study of women and children in Kazalinsk District of Kzyl-Orda Region of Kazakstan conducted by the London Institute of Tropical Medicine and the Kazakstan Institute of Geography, the prevalence of anemia among women age 15-45 was estimated at 46 percent and among children age 6-60 months at 64 percent (London School of Hygiene and Tropical Medicine, 1994).

11.2 Anemia Measurement Procedures

Testing of women and children for anemia was one of the major efforts of the 1995 KDHS. This was the first anemia study in Kazakstan 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 in Kazakstan. This chapter presents findings of the anemia study.

Anemia testing was done on 3,658 women age 15-49 and 739 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 herself 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 the 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).

11.3 Anemia Prevalence Among Women

Table 11.1 shows the results of anemia testing of women age 15-49. Almost half (49 percent) of the women in the sample were found to be anemic. Twelve percent had moderate or severe anemia with hemoglobin levels less than 10 g/dl. The group with the highest prevalence of anemia were women of the West Region. Among them, 19 percent were diagnosed as having moderate or severe anemia. The rates of moderate and severe anemia are higher among ethnic Kazaks as compared to ethnic Russians, and among rural women as compared to urban. Women with higher education are less frequently anemic than women with primary or secondary education. There are no significant differences in anemia rates across women's age except for a low prevalence of moderate anemia among women age 15-19.

Figure 11.1 shows the prevalence of moderate anemia among pregnant, breastfeeding, and nonpregnant, non-breastfeeding women. Among pregnant women in Kazakstan, moderate anemia is two to three times more common than among nonpregnant women (breastfeeding or non-breastfeeding).

Figure 11.2 illustrates hemoglobin distributions of pregnant women, breastfeeding women, and nonpregnant, non-breastfeeding women. The entire hemoglobin distribution for pregnant women is shifted downward as compared to the distribution for nonpregnant women. The hemoglobin distribution for breast-feeding women is also shifted downward compared to the distribution for nonpregnant and non-breastfeeding women, but to a lesser extent than the distribution for pregnant women.

Table 11.1 Anemia among women

Percentage of women age 15-49 classified as having anemia by background characteristics, Kazakstan 1995

Background characteristic	Percentage of women with: Severe anemia[1]	Moderate anemia[2]	Mild anemia[3]	Women measured
Age				
15-19	0.4	6.4	38.8	657
20-24	0.6	11.4	39.0	557
25-29	0.9	10.5	35.8	514
30-34	2.1	11.8	39.4	539
35-39	1.5	12.2	37.4	552
40-44	0.8	10.1	34.0	521
45-49	2.0	13.8	33.0	344
Residence				
Urban	0.7	9.0	36.5	2,058
Rural	1.7	12.6	37.8	1,626
Region				
Almaty city	1.1	9.4	27.7	249
South	0.8	10.6	38.9	1,177
West	2.5	16.4	40.0	459
Central	0.7	8.0	35.1	354
North and East	1.1	9.5	36.8	1,445
Education				
Primary/Secondary	1.3	11.6	37.8	1,352
Secondary-Special	1.0	10.7	37.9	1,681
Higher	1.1	8.2	33.5	651
Ethnicity				
Kazak	1.9	14.3	40.7	1,654
Russian	0.7	7.2	33.8	1,283
Other	0.3	8.2	34.7	747
Total	1.1	10.6	37.1	3,684

[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)

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

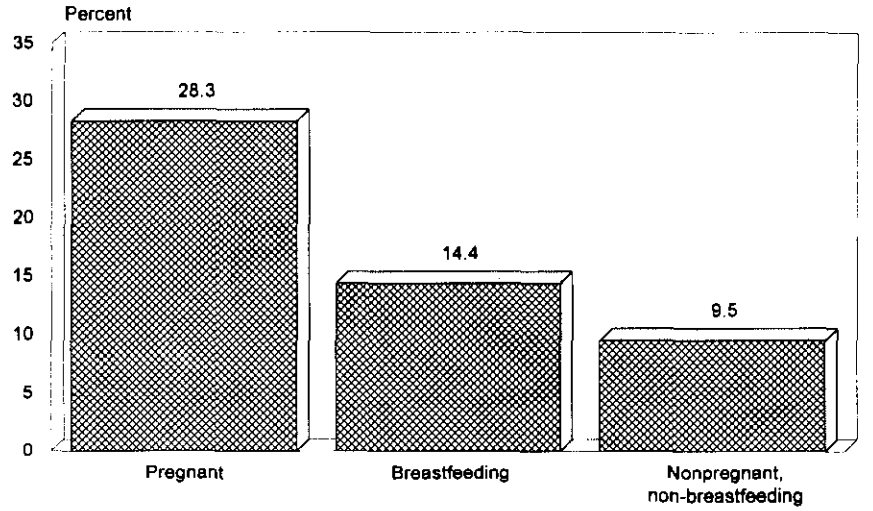
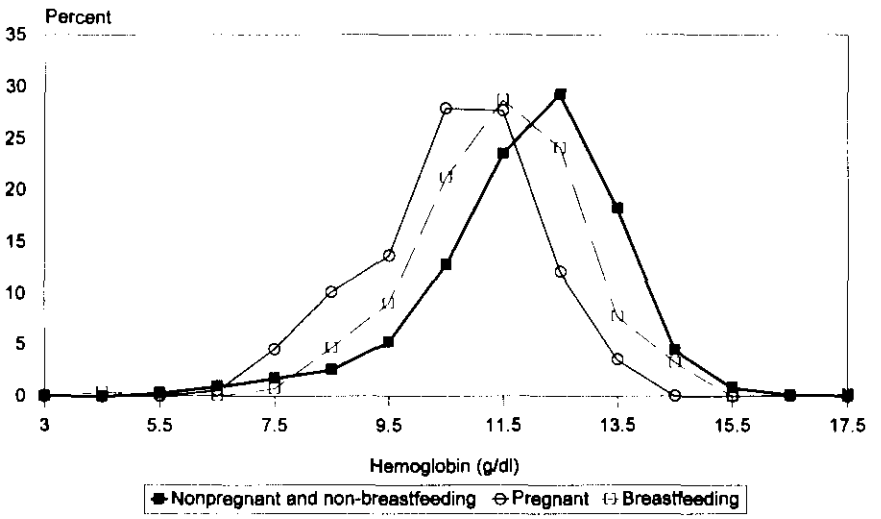


Figure 11.2
Percent Distribution of Hemoglobin Levels
among Women Age 15-49

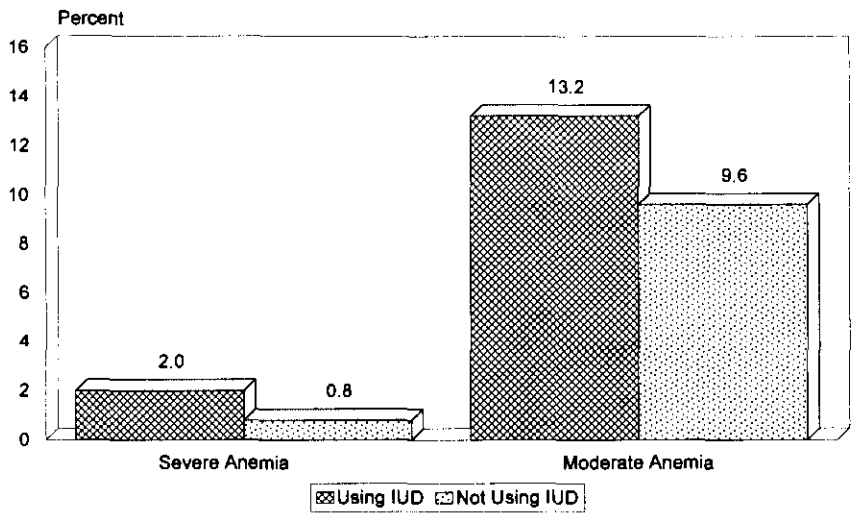


There is sufficient evidence to suggest that the majority of cases of anemia among women in Kazakstan are due to nutritional deficiency of iron. Testing blood for hemoglobin, which is an iron-containing conjugated protein occurring in red blood cells, can be used as a screening procedure for iron deficiency. 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. In a series of dietary assessment studies done by the Kazakstan Nutrition Institute during the last decade, an overall decrease of consumption of animal protein, essential vitamins and microelements by various population groups in Kazakstan has been documented (National Institute of Nutrition, 1996). Deficiencies of iron and other nutrients are especially critical during pregnancy and growth in early childhood.

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.

It has been shown previously that the mean monthly menstrual blood loss has increased 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 KDHS data, almost 40 percent of currently married women in Kazakstan are using the IUD. The prevalence of anemia among women according to whether or not the respondent is currently using the IUD as a method of contraception is presented in Figure 11.3. As a result, the rates of severe and moderate anemia among IUD users are higher than among nonusers.

Figure 11.3
Percentage of Women with Moderate or Severe Anemia among Those Who Are Currently Using or Not Using the IUD



11.4 Anemia Prevalence Among Children

Table 11.2 presents anemia rates for children. A high national rate of anemia (69 percent) is found among children under the age of three. One-third of all children of Kazakstan are diagnosed as having moderate anemia, while 6 percent of children have severe anemia. Similar to women, the highest prevalence of anemia is observed among the children of the Western Region of Kazakstan; almost half are moderately anemic, and 8 percent are severely anemic.

The most pronounced differentials are observed in terms of the prevalence of severe anemia. Nine percent of ethnic Kazak children have severe anemia, while no ethnic Russian children are severely anemic, and the prevalence for other ethnic groups is 1 percent. Similarly, percentages of severe anemia for children of mothers with a primary/secondary education and for children residing in the South, West, and Central Regions of Kazakstan are two to five times higher than those for other groups of children. Children residing in rural areas are more likely to have severe or moderate anemia.

Table 11.2 Anemia among children

Percentage of children under three years classified as having anemia by background characteristics, Kazakstan 1995

Background characteristic	Percentage of children with: Severe anemia[1]	Moderate anemia[2]	Mild anemia[3]	Children measured
Residence				
Urban	4.5	26.9	32.3	293
Rural	6.1	38.2	28.6	422
Region				
Almaty city	1.5	20.0	26.2	29
South	7.4	32.8	32.7	319
West	7.7	47.3	26.0	93
Central	5.1	40.0	21.7	73
North and East	2.0	27.9	31.7	200
Education of mother				
Primary/Secondary	6.7	35.3	25.7	261
Secondary-Special	5.3	32.9	33.8	340
Higher	3.0	31.7	29.5	113
Ethnicity				
Kazak	8.9	40.6	28.2	420
Russian	0.0	27.5	31.0	159
Other	1.3	19.0	35.1	135
Total	5.5	33.6	30.1	714

[1] Hemoglobin level less than 7g/dl
[2] Hemoglobin level 7 - 9.9 g/dl
[3] Hemoglobin level 10 - 10.9 g/dl

Table 11.3 shows the percentage of children under age three classified as having anemia by selected demographic characteristics. The prevalence of severe anemia increases with increasing birth order. On average, at least 10 percent of children of birth order 4-5 and 6 or more have severe anemia, and about one-third are diagnosed as having moderate anemia. The percentages of severe anemia for these groups of children are twice as high as for the children who are first born. The prevalence of moderate and severe anemia increases with age, peaking at 12-23 months (48 percent). The percentage of children 12-23 months of age who are diagnosed as having severe anemia is four times greater than the percentage among children under six months of age.

The high rate of anemia found among children 12-23 months of age can be explained by the rapid rate of growth and increased iron requirements during this stage of childhood. This is in accordance with several physiological studies which show that iron deposits are more likely to become depleted between six months and two to three years of age during weaning and the introduction of transitional food (INACG, 1979; Cook and Bothwell, 1984; Oski, 1993). Customs in Kazakstan which include the early introduction of cow's milk as a breast milk substitute, the relatively low consumption of meat products (a major source of bioavailable iron), and the widespread practice of giving children tea, which inhibits iron absorption, could also lead to the depletion of iron reserves and development of anemia.

Children born within an interval of 24-47 months have higher rates of severe anemia than children born within intervals of less than 24 months or more than two years (Table 11.3). The proportions of severe and moderate anemia are higher among male than female children.

Table 11.3 Anemia among children by demographic characteristics

Percentage of children under three years classified as having anemia by demographic characteristics, Kazakstan 1995

Demographic characteristic	Percentage of children with: Severe anemia[1]	Moderate anemia[2]	Mild anemia[3]	Children measured
Sex				
Male	6.6	38.3	27.1	331
Female	4.5	29.5	32.8	384
Age				
<6 months	1.7	38.3	24.9	103
6-11 months	2.8	25.4	48.1	126
12-23 months	7.2	40.6	28.2	264
24-35 months	6.6	27.7	24.6	222
Birth order				
1	4.2	33.8	26.0	271
2-3	4.6	32.5	34.3	324
4-5	10.3	38.4	28.3	93
6+	12.3	28.0	29.3	26
Birth interval				
<24 months	4.5	39.3	31.4	138
24-47 months	8.4	36.9	34.3	164
48+ months	5.4	24.1	31.4	140
Total	5.5	33.6	30.1	714

[1] Hemoglobin level less than 7g/dl
[2] Hemoglobin level 7 - 9.9 g/dl
[3] Hemoglobin level 10 - 10.9 g/dl

Certain relationships are observed between the prevalence of anemia among mothers and their children. Table 11.4 shows the prevalence of anemia for children according to the anemia status of their mothers. Among children of mothers with moderate anemia, 12 percent have severe anemia and 45 percent have moderate anemia. The proportion of severe anemia among these children is more than three times greater than among children of non-anemic mothers.

Thus, there are some demographic predisposing factors which increase the likelihood of anemia in children. These factors include the age of 12-23 months, high birth order, and having an anemic mother.

Table 11.4 Anemia among children born to anemic mothers

Percent distribution of children under three years by anemia status according to mothers' anemia status at the time of the survey, Kazakstan 1995

Mother's anemia status	Child's anemia status					Children measured
	Severe anemia[1]	Moderate anemia[2]	Mild anemia[3]	Not anemic	Total	
Severe anemia[1]	*	*	*	*	*	4
Moderate anemia[2]	12.1	44.9	25.0	18.0	100.0	103
Mild anemia[3]	5.1	33.4	31.6	29.9	100.0	264
Not anemic	3.6	29.3	30.3	36.7	100.0	291
Total	5.5	33.6	30.1	30.8	100.0	714

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

11.5 Summary

The high prevalence of anemia among the women and children of Kazakstan is documented by the 1995 KDHS study. Negative iron balance is probably a major cause of anemia among both women and young children.

The KDHS results are in accordance with data from the two recent studies mentioned earlier: the 1993 Crosslink study in Muynak District of adjoining Uzbekistan (Morse, 1994), and the study done by the London School of Hygiene and Tropical Medicine in Kzyl-Orda oblast of Kazakstan (London School of Hygiene and Tropical Medicine, 1994). Both studies showed similarly high rates of anemia among women and children living in the area of environmental crisis around the Aral Sea. In the KDHS, the area of the Aral sea is covered by the survey regions located in the South and West of Kazakstan, where the prevalence of anemia is among the highest.

It is unlikely that hemoglobinopathies contribute substantially to the overall high prevalence of anemia in Kazakstan. In the study by the Crosslink group, only 0.14 percent of individuals residing in Muynak district of Karakalpakstan are diagnosed as having hemoglobinopathy (thalassemia was not determined) (Morse, 1994). Considering the common genetic features of the people of Kazak and Karakalpak origin, the prevalence of hemoglobinopathies among the Kazaks is also probably low.

The KDHS findings, as well as other geographically focused studies, provide an important information base for development of health intervention programs to prevent many severe complications of pregnancy and delivery related to iron-deficiency anemia among women of certain ethnic, educational, and residential groups in Kazakstan. These data are important as a background for public health policy decisions that pertain to the iron fortification of food in Kazakstan. Since anemia represents only the severe end of the iron deficiency spectrum, it is assumed that the total proportion of iron deficient individuals in the population is greater than that reflected by the prevalence of anemia detected by hemoglobin measurement alone. Therefore, in Kazakstan, where the prevalence of anemia is 49 percent among women and almost 70 percent among children based on hemoglobin measurement, the real magnitude of iron deficiency is greater, and therefore universal iron fortification or supplementation may be justified. Another solution would be selective supplementation of iron for certain population groups, such as pregnant women and young children.

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APPENDIX A

SAMPLE DESIGN

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A.1 Introduction

The Kazakstan Demographic and Health Survey (KDHS) employed a nationally representative probability sample of women age 15-49. The country was divided into five survey regions. Almaty City constituted a survey region by itself, while the remaining four survey regions consisted of groups of contiguous *oblasts* (except the East Kazakstanskaya) *oblast* which is not contiguous. The five survey regions were defined as follows:

1) Almaty City	
2) South Region:	Taldy-Kourganskaya, Almatinskaya (except Almaty City), Zhambylskaya, South Kazakstanskaya, and Kzyl-Ordinskaya
3) West Region:	Aktiubinskaya, Mangistauskaya, Atyrauskaya, and West Kazakstanskaya.
4) Central Region:	Semipalatinskaya, Zhezkaganskaya, and Tourgaiskaya.
5) North and East Region:	East Kazakstanskaya, Pavlodarskaya, Karagandinskaya, Akmolinskaya, Kokchetauskaya, North Kazakstanskaya, and Koustanaiskaya.

The *oblast* composition of regions outside of Almaty City was determined on the basis of geographic proximity and demographic characteristics. The South and West Regions are comprised of *oblasts* which traditionally have a high proportion of Kazak population and high fertility levels. The Central Region includes three *oblasts* in which the fertility level is similar to the national average. The North and East Region contains seven *oblasts* situated in northern Kazakstan in which a relatively high proportion of the population is of ethnic Russian origin and the fertility level is lower than the national average.

A.2 Characteristics of the KDHS Sample

In Almaty City, the sample for the KDHS was selected in two stages. In the first stage, 40 census counting blocks were selected with equal probability from the 1989 list of counting blocks created for the 1989 population census.[1] A complete listing of the households residing in the selected counting blocks was carried out. The lists of households obtained served as the frame for second-stage sampling which is the selection of the households to be visited by the KDHS interviewing teams. In each selected household, women age 15-49 were identified and interviewed.

[1] Census materials that were in good condition could only be found for Almaty City. For the rest of the country, census materials concerning the counting blocks were not centrally available, nor were they available in all *oblasts*. Consequently, different sampling frames had to be constructed, separately for the other urban areas and for the rural areas.

In the rural areas, the primary sampling units (PSUs) corresponded to the *raions* which were selected with probabilities proportional to size, the size being the 1993 census population, published by Goskomstat (1993). At the second stage, one village was selected in each selected *raion* from the 1989 Registry of Villages. This resulted in 50 rural clusters being selected. At the third stage, households were selected in each cluster following the household listing operation as in Almaty City.

In the urban areas other than Almaty City, the PSUs were the cities and towns themselves. In the second stage, one health block[2] was selected from each town except in self-representing cities (large cities that were selected with certainty) where more than one health block was selected. The selected health blocks were segmented prior to the household listing operation which provided the household lists for the third stage selection of households. In total, 86 health blocks were selected.

A.3 Sample Allocation

Tables A.1 and A.2 show the distribution of the population in Kazakstan to the different survey regions, according to the *1993 Demographic Yearbook of Kazakstan* (Goskomstat, 1993) as follows:

Table A.1 Population Distribution (1993)

Region	Urban	Rural	Total
Total	9718000	7267700	16985700
Almaty City	1197900	0	1197900
South	2271300	3102200	5373500
West	1271200	956800	2228000
Central	931300	721100	1652400
North and East	4046300	2487600	6533900

Table A.2 Percent Distribution of Population (1993)

Region	Urban	Rural	Total
Total	57.2	42.8	100.0
Almaty City	100.0	0.0	7.1
South	42.3	57.7	31.6
West	57.1	42.9	13.1
Central	56.4	43.6	9.7
North and East	61.9	38.1	38.5

[2] In Kazakstan, each city or town is divided into health blocks, each of which is the responsibility of one physician. People living in the health block would go to a designated health center for service. This is where the physician in charge is located and maintains a map of the health block and even lists of households residing in the health block. The average population size of the health block is about 2,000. There are three different types of health blocks: the internist's block, the pediatrician's block, and the obstetrician/gynecologist's block, each serving a different group of patients as the names indicate. The internist blocks are largest in number (and correspondingly serve smaller groups of patients), and therefore were selected as the area sampling units for the KDHS. The literal Russian translation of internist's block is actually therapeutical block. For the KDHS, it is referred to simply as the health block.

The regions, stratified by urban and rural areas, were the sampling strata. Therefore, there were nine strata with Almaty City constituting an entire stratum. As shown in Table A.3, a proportional allocation of the target number of 4,000 women to the nine strata would yield the following sample distribution:

Table A.3 Proportional Sample Allocation

Region	Urban	Rural	Total
Total	2289	1711	4000
Almaty City	282	0	282
South	535	730	1265
West	300	225	525
Central	219	170	389
North and East	953	586	1539

This proportional allocation would result in a completely self-weighting sample but would not allow for reliable estimates for three regions: Almaty City, West, and Central. Results of other demographic and health surveys show that a minimum sample of 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 KDHS could not be increased so as to achieve the required level of sampling errors, it was decided that the sample would be divided equally to the five regions, and within each region, it would be distributed proportionally to the urban and the rural areas. With this type of allocation, demographic rates (fertility and mortality) could not be produced for the regions. Table A.4 shows the proposed sample allocation.

Table A.4 Proposed Sample Allocation

Region	Urban	Rural	Total
Total	2540	1460	4000
Almaty City	800	0	800
South	338	462	800
West	456	344	800
Central	451	349	800
North and East	495	305	800

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. 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 in each urban cluster and 30 women in each rural cluster were to be interviewed, then the distribution of sample points would be as follows:

The number of clusters in the South Region in Table A.5 would yield a slightly smaller number of women than expected because of rounding errors. Consequently, the number of clusters were rearranged in each stratum so that it was an even number, but in such a way that the expected regional sample size did not fall short of the required 800 minimum. 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.5 Number of Sample Points

Region	Urban	Rural	Total
Total	128	48	176
Almaty City	40	0	40
South	17	15	32
West	23	11	34
Central	23	12	35
North and East	25	10	35

Table A.6 Proposed Number of Sample Points

Region	Urban	Rural	Total
Total	126	50	176
Almaty City	40	0	40
South	16	16	32
West	22	12	34
Central	22	12	34
North and East	26	10	36

The number of households to be selected for each stratum was calculated as follows:

$$Number\ of\ HHs = \frac{Number\ of\ women}{Number\ of\ women\ per\ HH \times Overall\ response\ rate}$$

According to the 1989 census, the proportion of women age 15-49 in Kazakstan was 25 percent. By applying this figure to the average household size of 4.0 obtained from a household survey conducted by Goskomstat, the number of women age 15-49 was estimated to be 1.0 per household. The overall response rate was assumed to be 90 percent (95 percent for households and 95 percent for women), which was the average overall response rate found in DHS surveys. Using these two parameters in the previous equation, approximately 4,500 households had to be selected in order to yield the target sample of women. This resulted in selecting on average 22 households in each urban cluster and 33 households in each rural cluster.

A.4 Stratification and Systematic Selection of Clusters

Stratification of the area sampling units was mostly geographic within each sampling stratum.

A.4.1 Almaty City

After ordering the *raions* geographically, and maintaining the order of the counting blocks within the *raion,* the counting blocks were selected with equal probability. Selection with probability proportional to size was not necessary since the counting blocks were relatively uniform in size (average population size of 417, standard deviation of 36, and coefficient of variation of 8.6 percent).

The selection interval was calculated as follows:

$$I = \frac{2515}{40}$$

where 2,515 is the total number of counting blocks in Almaty City and 40 is the number of counting blocks to be selected.

The counting blocks to be selected were the ones with the following serial numbers: R, $R+I$, $R+2I$, ..., $R+39I$, where R is a random number between 1 and I.

A.4.2 Other urban areas

In the other urban areas, the cities and towns were selected with probabilities proportional to size, the size being the 1993 population count. Large cities, or self-representing cities, that had to be selected with certainty (probability = 1.0) were separated out before towns were selected. The limit above which a city became self-representing was calculated as follows:

$$L = \frac{\textit{Population in stratum}}{\textit{Number of Health Blocks to be Selected}}$$

Within each city, the required number of health blocks were selected with equal probability.

The selection intervals for the towns were calculated as follows:

$$I = \frac{\Sigma M_i}{a}$$

where ΣM_i is the size of the stratum (total population in the stratum according to the sampling frame) and a is the number of towns to be selected in the stratum. The selection procedure consisted of: (1) calculating the cumulated size of each town; (2) calculating the series of sampling numbers R, $R+I$, $R+2I$, ..., $R+(a-1)I$, where R is a random number between 1 and I; and (3) comparing each sampling number with the cumulated sizes. The town to be selected was the first town whose cumulated size was greater or equal to the sampling number. Within each town, one health block was selected using a random number between 1 and the number of health blocks that exist in the town.

A.4.3 Rural areas

In the rural areas, the *raions* were selected with probabilities proportional to size. One village was then selected within each *raion* using a random number between 1 and the number of villages that exist in the *raion*. Selection of *raions* followed the same procedure of town selection.

Health blocks and villages that were very large in size were divided into segments of approximately 200-300 households and only one segment was retained for the KDHS.

A.5 Sampling Probabilities

The sampling probabilities were calculated separately for each sampling stage, and independently for each stratum. The following notations were used:

P_1 is the first-stage sampling probability (counting blocks, towns, or *raions*).
P_2 is the second-stage sampling probability (health blocks, villages).
P_3 is the third-stage sampling probability (households).

A.5.1 Almaty City

Let a be the number of counting blocks selected and A be the total number of counting blocks in Almaty City. The probability of inclusion of the i^{th} counting block in the sample is calculated as follows:

$$P_{1i} = \frac{a}{A} = \frac{40}{2515}$$

In the second stage, a number, b_i, of households was selected from the number M_i' of households listed in the i^{th} selected counting block by the KDHS teams. It follows that:

$$P_{2i} = \frac{b_i}{M_i'}$$

In order for the sample to be self-weighting within the stratum, the overall probability $f = P_{1i}.P_{2i}$ must be the same for each household within the stratum. This implies that:

$$P_{1i}.P_{2i} = \frac{b_i}{40M_i'} = f$$

where f is the sampling fraction for Almaty City calculated as follows:

$$f = \frac{n}{N}$$

where n is the number of households selected in Almaty City and N is the estimated number of households that existed in Almaty City in 1995, at the time of fieldwork.

A.5.2 Other urban areas

First, towns will be discussed. Let a be the number of towns selected in a given stratum M_i, the size (population according to the sampling frame) of the i^{th} town in the stratum, and ΣM_i, the total size of the stratum (population according to the sampling frame). The probability of inclusion of the i^{th} town in the sample is calculated as follows:

$$P_{1i} = \frac{aM_i}{\sum_i M_i}$$

In the second stage, one health block was selected in each town. The probability of selection of the j^{th} health block in the i^{th} town is as follows:

$$P_{2ij} = \frac{m_{ij}}{\sum_j m_{ij}}$$

where m_{ij} is the size of the j^{th} health block.

An intermediary sampling stage was introduced between the second and third sampling stages. This selection stage was not considered an effective stage but only a pseudo-stage in order to reduce the size of the health block. Let t_{ijk} be the estimated size (in proportion) of the k^{th} segment selected for the j^{th} health block. Note that $\Sigma t_{ijk} = 1$. The sampling probabilities are:

$$P_{1i} \cdot P_{2ij} = \frac{aM_i}{\sum_i M_i} \cdot \frac{m_{ij} t_{ijk}}{\sum_j m_{ij}}$$

In the third stage, a number, b_i, of households was selected from the number M_i' of households listed in the k^{th} segment of the j^{th} health block by the KDHS teams. It follows that:

$$P_{1i} \cdot P_{2ij} \cdot P_{3ijk} = \frac{aM_i}{\sum_i M_i} \cdot \frac{m_{ij} t_{ijk}}{\sum_j m_{ij}} \cdot \frac{b_i}{M_i'}$$

In order for the sample to be self-weighting within the stratum, the overall probability $f = P_{1i} \cdot P_{2ij} \cdot P_{3ijk}$ must be the same for each household within the stratum, where f is the sampling fraction calculated as in Almaty City, separately for each stratum.

The selection of the households was systematic with equal probability and the selection interval was calculated as follows:

$$I_i = \frac{1}{P_{3ijk}} = \frac{P_{1i} \cdot P_{2ij}}{f}$$

In the case of self-representing cities, $P_{1i} = 1$. If more than one health block were selected then:

$$P_{2ij} = \frac{a' m_{ij}}{\sum_j m_{ij}}$$

where a' is the number of health blocks selected in the city. The other parameters were calculated as those for towns.

A.5.3 Rural areas

The calculations of the selection probabilities for the different stages of sampling were the same as for the towns, with *raions* equivalent to towns, and villages equivalent to health blocks.

APPENDIX B

ESTIMATES OF SAMPLING ERRORS

APPENDIX B

ESTIMATES OF SAMPLING ERRORS

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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 KDHS 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 KDHS 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 KDHS 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 KDHS 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

$$z_{hi} = y_{hi} - r.x_{hi} \text{ , and } z_h = y_h - r.x_h$$

where h represents the stratum which varies from 1 to H,
m_h is the total number of clusters selected in the h^{th} stratum,
y_{hi} is the sum of the values of variable y in the i^{th} cluster in the h^{th} stratum,
x_{hi} is the sum of the number of cases in the i^{th} cluster in the h^{th} stratum, and
f is the overall sampling fraction, which is so small that it is ignored.

The Jackknife repeated replication method derives estimates of complex rates from each of several replications of the parent sample, and calculates standard errors for these estimates using simple formulae. Each replication considers *all but one* clusters in the calculation of the estimates. Pseudo-independent replications are thus created. In the KDHS, there were 176 non-empty clusters. Hence, 176 replications were created. The variance of a rate r is calculated as follows:

$$SE^2(R) = var(r) = \frac{1}{k(k-1)} \sum_{i=1}^{k} (r_i - r)^2$$

in which

$$r_i = kr - (k-1)r_{(i)} \qquad (4)$$

where r is the estimate computed from the full sample of 176 clusters,
$r_{(i)}$ is the estimate computed from the reduced sample of 175 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 KDHS 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 five survey regions, and for three ethnic groups (Kazak, Russian, 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 total fertility and childhood mortality rates only apply to the national sample, the urban and rural samples, and the Kazak and Russian ethnic groups. 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 age 15-49*) can be interpreted as follows: the overall average from the national sample is 1.816 and its standard error is .033. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate, i.e.,. 1.816±2(.033). There is a high probability (95 percent) that the *true* average number of children ever born to all women age 15 to 49 is between 1.750 and 1.882.

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 (SE/R) for the means and proportions range between 0.2 percent and 21.4 percent with an average of 7.3 percent; the highest relative standard errors are for estimates of very low values (e.g., *severe anemia* among women who were tested). If estimates of very low values (less than 10 percent) are removed, then the average drops to 5 percent. In general, the relative standard errors for most estimates for the country as a whole are small, except for estimates of very small proportions. The relative standard error for the total fertility rate is small at 5 percent. However, for mortality rates, the average relative standard error is much higher at 22 percent. If the neonatal, postneonatal, and child mortality rates, which are considered rare events, are removed, then the relative standard error for the mortality rates drops to 14 percent.

There are differentials in the relative standard error for the estimates of subpopulations. For example, for the variable *secondary-special education,* the relative standard errors as a percent of the estimated mean for the whole country, for the rural areas, and for Almaty city are 3.1 percent, 4.5 percent, and 6.2 percent, respectively.

For the total sample, the value of the design effect (DEFT) averaged over all variables is 1.26, which means that due to multistage clustering of the sample, variance is increased by a factor of 1.6 over that of an equivalent simple random sample.

Table B.1 List of selected variables for sampling errors, Kazakstan 1995

Variable	Description	Base population
	WOMEN	
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 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
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
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
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
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
Weight-for-height	Proportion	Children under 3 who were measured
Height-for-age	Proportion	Children under 3 who were measured
Weight-for-age	Proportion	Children under 3 who were measured
Total fertility rate (3 years)	Rate	Women-years of exposure to childbearing
Neonatal mortality rate (0-4 years)	Rate	Number of births
Postneonatal mortality rate (0-4 years)	Rate	Number of births
Infant mortality rate (0-4 years)	Rate	Number of births
Child mortality rate (0-4 years)	Rate	Number of births
Under-five mortality rate (0-4 years)	Rate	Number of births

Table B.2 Sampling errors - National sample: Kazakstan 1995

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
Primary/secondary education	.365	.015	3771	3771	1.876	.040	.336	.394
Secondary-special education	.456	.014	3771	3771	1.737	.031	.428	.484
Higher education	.178	.011	3771	3771	1.718	.060	.156	.199
Never married (in union)	.235	.007	3771	3771	1.074	.032	.220	.249
Currently married (in union)	.665	.009	3771	3771	1.169	.014	.647	.683
Married before age 20	.343	.015	2525	2535	1.570	.043	.313	.372
Had first sexual intercourse before 18	.118	.009	2525	2535	1.441	.078	.099	.136
Children ever born	1.816	.033	3771	3771	1.127	.018	1.750	1.881
Children ever born to women over 40	3.114	.080	875	892	1.133	.026	2.954	3.275
Children surviving	1.713	.031	3771	3771	1.136	.018	1.652	1.774
Knowing any contraceptive method	.993	.002	2457	2507	1.136	.002	.989	.997
Knowing any modern method	.993	.002	2457	2507	1.128	.002	.989	.997
Ever used any contraceptive method	.835	.012	2457	2507	1.572	.014	.811	.858
Currently using any method	.591	.015	2457	2507	1.511	.025	.561	.621
Currently using a modern method	.461	.012	2457	2507	1.158	.025	.437	.484
Currently using pill	.018	.003	2457	2507	1.186	.178	.011	.024
Currently using IUD	.396	.012	2457	2507	1.174	.029	.372	.419
Currently using condom	.037	.004	2457	2507	.951	.098	.030	.044
Currently using periodic abstinence	.065	.007	2457	2507	1.422	.109	.051	.079
Currently using withdrawal	.032	.005	2457	2507	1.543	.172	.021	.043
Using public sector source	.924	.011	1259	1266	1.498	.012	.902	.947
Want no more children	.594	.010	2457	2507	1.057	.018	.573	.614
Want to delay at least 2 years	.186	.008	2457	2507	1.058	.045	.169	.203
Ideal number of children	2.937	.045	3602	3621	1.868	.015	2.847	3.026
Severe anemia	.011	.002	3658	3683	1.385	.214	.007	.016
Moderate anemia	.106	.007	3658	3683	1.463	.070	.091	.121
Mild anemia	.371	.010	3658	3683	1.311	.028	.350	.392
BMI < 18.5	.079	.005	3507	3525	1.074	.062	.069	.088
BMI between 18.5 and 30.0	.754	.007	3507	3525	1.007	.010	.739	.769
BMI > 30.0	.167	.009	3507	3525	1.349	.051	.150	.184
Weight-for-height	.039	.004	3500	3519	1.232	.103	.031	.047
Mothers received medical care at birth	.996	.002	846	810	1.056	.002	.991	1.000
Had diarrhea in the last 2 weeks	.157	.018	811	779	1.301	.112	.122	.193
Treated with ORS packets	.282	.049	116	123	1.171	.174	.183	.380
Consulted medical personnel	.258	.059	116	123	1.379	.229	.139	.376
Having health card, seen	.081	.014	294	280	.836	.168	.054	.109
Received BCG vaccination	.968	.012	294	280	1.159	.013	.943	.992
Received DPT vaccination (3 doses)	.417	.037	294	280	1.250	.089	.343	.491
Received polio vaccination (3 doses)	.483	.041	294	280	1.353	.084	.402	.564
Received measles vaccination	.669	.033	294	280	1.152	.049	.603	.734
Fully immunized	.234	.028	294	280	1.097	.119	.178	.290
Severe anemia	.055	.008	739	714	.967	.149	.038	.071
Moderate anemia	.336	.017	739	714	.949	.050	.302	.369
Mild anemia	.301	.022	739	714	1.277	.073	.257	.346
Weight-for-height	.033	.007	735	717	.988	.201	.020	.046
Height-for-age	.158	.018	735	717	1.318	.116	.121	.195
Weight-for-age	.083	.012	735	717	1.178	.148	.059	.108
Total fertility rate (3 years)	2.492	.134	NA	10669	1.705	.054	2.224	2.760
Neonatal mortality rate (0-4 years)	19.528	4.504	1495	1450	1.243	.231	10.520	28.536
Postneonatal mortality rate (0-4 years)	20.128	4.352	1497	1452	1.158	.216	11.423	28.833
Infant mortality rate (0-4 years)	39.656	5.588	1497	1451	1.107	.141	28.479	50.833
Child mortality rate (0-4 years)	6.076	2.336	1498	1452	1.129	.384	1.403	10.748
Under-five mortality rate (0-4 years)	45.490	6.286	1500	1453	1.140	.138	32.919	58.062

NA = Not applicable

Table B.3 Sampling errors - Urban sample: Kazakstan 1995

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
Primary/secondary education	.279	.018	2056	2133	1.808	.064	.243	.314
Secondary-special education	.483	.020	2056	2133	1.790	.041	.444	.523
Higher education	.238	.017	2056	2133	1.814	.072	.204	.272
Never married (in union)	.224	.010	2056	2133	1.055	.043	.204	.243
Currently married (in union)	.656	.011	2056	2133	1.079	.017	.633	.678
Married before age 20	.331	.019	1448	1513	1.515	.057	.293	.368
Had first sexual intercourse before 18	.115	.010	1448	1513	1.199	.087	.095	.135
Children ever born	1.563	.043	2056	2133	1.366	.028	1.476	1.649
Children ever born to women over 40	2.464	.076	550	586	1.099	.031	2.313	2.615
Children surviving	1.489	.041	2056	2133	1.377	.027	1.408	1.570
Knowing any contraceptive method	.996	.002	1304	1398	1.206	.002	.991	1.000
Knowing any modern method	.996	.002	1304	1398	1.206	.002	.991	1.000
Ever used any contraceptive method	.881	.014	1304	1398	1.537	.016	.854	.909
Currently using any method	.619	.022	1304	1398	1.639	.036	.575	.663
Currently using a modern method	.470	.015	1304	1398	1.098	.032	.439	.500
Currently using pill	.023	.005	1304	1398	1.197	.217	.013	.033
Currently using IUD	.392	.015	1304	1398	1.142	.039	.361	.423
Currently using condom	.044	.006	1304	1398	1.022	.131	.033	.056
Currently using periodic abstinence	.079	.009	1304	1398	1.240	.117	.061	.098
Currently using withdrawal	.021	.006	1304	1398	1.550	.294	.009	.033
Using public sector source	.895	.017	707	742	1.479	.019	.860	.929
Want no more children	.613	.012	1304	1398	.887	.020	.589	.637
Want to delay at least 2 years	.152	.012	1304	1398	1.202	.079	.128	.176
Ideal number of children	2.660	.051	1984	2065	1.810	.019	2.558	2.763
Severe anemia	.007	.002	1958	2058	1.085	.287	.003	.011
Moderate anemia	.090	.009	1958	2058	1.342	.096	.073	.107
Mild anemia	.365	.017	1958	2058	1.569	.047	.331	.399
BMI < 18.5	.073	.007	1932	2018	1.116	.090	.060	.087
BMI between 18.5 and 30.0	.750	.009	1932	2018	.950	.012	.732	.769
BMI > 30.0	.176	.011	1932	2018	1.298	.064	.154	.199
Weight-for-height	.029	.004	1931	2017	.981	.130	.021	.036
Mothers received medical care at birth	1.000	.000	326	343	Und	Und	1.000	1.000
Had diarrhea in the last 2 weeks	.150	.026	315	334	1.242	.170	.099	.201
Treated with ORS packets	.255	.076	44	50	1.101	.297	.104	.407
Consulted medical personnel	.254	.086	44	50	1.253	.339	.082	.426
Having health card, seen	.046	.015	114	118	.760	.325	.016	.076
Received BCG vaccination	1.000	.000	114	118	Und	Und	1.000	1.000
Received DPT vaccination (3 doses)	.504	.057	114	118	1.219	.113	.390	.618
Received polio vaccination (3 doses)	.554	.065	114	118	1.405	.118	.423	.685
Received measles vaccination	.698	.049	114	118	1.147	.071	.600	.797
Fully immunized	.292	.048	114	118	1.120	.163	.197	.388
Severe anemia	.045	.012	275	293	1.017	.278	.020	.070
Moderate anemia	.269	.030	275	293	1.099	.110	.210	.328
Mild anemia	.323	.044	275	293	1.588	.136	.235	.411
Weight-for-height	.037	.014	277	300	1.245	.377	.009	.064
Height-for-age	.075	.024	277	300	1.576	.325	.026	.124
Weight-for-age	.079	.021	277	300	1.365	.273	.036	.122
Total fertility rate (3 years)	2.001	.169	NA	6079	1.593	.084	1.663	2.338
Neonatal mortality rate (0-9 years)	26.344	5.135	1296	1350	1.189	.195	16.075	36.613
Postneonatal mortality rate (0-9 years)	12.851	3.425	1297	1350	1.112	.267	6.000	19.701
Infant mortality rate (0-9 years)	39.195	6.100	1297	1350	1.170	.156	26.994	51.396
Child mortality rate (0-9 years)	4.317	2.153	1297	1351	1.189	.499	0.011	8.623
Under-five mortality rate (0-9 years)	43.343	6.377	1298	1352	1.161	.147	30.588	56.097

NA = Not applicable
Und = Undefined

Table B.4 Sampling errors - Rural sample: Kazakstan 1995

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
Primary/secondary education	.477	.023	1715	1638	1.904	.048	.431	.523
Secondary-special education	.421	.019	1715	1638	1.599	.045	.383	.460
Higher education	.099	.011	1715	1638	1.539	.112	.077	.121
Never married (in union)	.249	.011	1715	1638	1.081	.045	.226	.271
Currently married (in union)	.677	.015	1715	1638	1.311	.022	.647	.707
Married before age 20	.360	.024	1077	1022	1.651	.067	.312	.409
Had first sexual intercourse before 18	.122	.018	1077	1022	1.756	.144	.087	.157
Children ever born	2.145	.042	1715	1638	.819	.020	2.061	2.229
Children ever born to women over 40	4.362	.161	325	306	1.239	.037	4.040	4.684
Children surviving	2.005	.039	1715	1638	.834	.020	1.926	2.083
Knowing any contraceptive method	.989	.003	1153	1109	1.130	.003	.983	.996
Knowing any modern method	.989	.003	1153	1109	1.119	.003	.982	.996
Ever used any contraceptive method	.775	.020	1153	1109	1.619	.026	.735	.815
Currently using any method	.556	.019	1153	1109	1.272	.033	.519	.593
Currently using a modern method	.449	.018	1153	1109	1.228	.040	.413	.485
Currently using pill	.011	.004	1153	1109	1.120	.307	.004	.018
Currently using IUD	.400	.018	1153	1109	1.217	.044	.365	.435
Currently using condom	.028	.004	1153	1109	.783	.136	.021	.036
Currently using periodic abstinence	.047	.011	1153	1109	1.723	.230	.025	.068
Currently using withdrawal	.045	.010	1153	1109	1.596	.216	.026	.065
Using public sector source	.966	.012	552	524	1.501	.012	.943	.989
Want no more children	.569	.018	1153	1109	1.225	.031	.534	.605
Want to delay at least 2 years	.229	.010	1153	1109	.823	.045	.209	.249
Ideal number of children	3.304	.069	1618	1555	1.777	.021	3.166	3.442
Severe anemia	.017	.005	1700	1625	1.547	.289	.007	.026
Moderate anemia	.126	.012	1700	1625	1.547	.099	.101	.151
Mild anemia	.378	.010	1700	1625	.830	.026	.358	.398
BMI < 18.5	.085	.007	1575	1507	.994	.082	.071	.099
BMI between 18.5 and 30.0	.759	.012	1575	1507	1.086	.015	.736	.783
BMI > 30.0	.156	.013	1575	1507	1.407	.083	.130	.181
Weight-for-height	.053	.008	1569	1502	1.355	.145	.038	.068
Mothers received medical care at birth	.993	.004	520	466	1.074	.004	.985	1.000
Had diarrhea in the last 2 weeks	.163	.024	496	445	1.352	.148	.115	.212
Treated with ORS packets	.300	.063	72	73	1.195	.209	.175	.425
Consulted medical personnel	.260	.080	72	73	1.480	.309	.099	.421
Having health card, seen	.107	.020	180	161	.850	.189	.067	.148
Received BCG vaccination	.944	.020	180	161	1.128	.021	.905	.984
Received DPT vaccination (3 doses)	.353	.044	180	161	1.184	.124	.266	.441
Received polio vaccination (3 doses)	.431	.047	180	161	1.226	.109	.337	.525
Received measles vaccination	.647	.043	180	161	1.153	.066	.561	.733
Fully immunized	.191	.031	180	161	1.024	.162	.129	.253
Severe anemia	.061	.011	464	422	.936	.172	.040	.082
Moderate anemia	.382	.019	464	422	.846	.050	.344	.421
Mild anemia	.286	.021	464	422	.983	.075	.244	.329
Weight-for-height	.030	.005	458	416	.638	.173	.020	.040
Height-for-age	.218	.026	458	416	1.285	.120	.166	.270
Weight-for-age	.086	.015	458	416	1.060	.168	.057	.116
Total fertility rate (3 years)	3.060	.205	NA	4590	1.594	.067	2.651	3.470
Neonatal mortality rate (0-9 years)	13.168	3.897	1839	1705	1.451	.296	5.374	20.962
Postneonatal mortality rate (0-9 years)	28.928	5.950	1843	1711	1.456	.206	17.029	40.827
Infant mortality rate (0-9 years)	42.097	6.774	1843	1711	1.394	.161	28.548	55.645
Child mortality rate (0-9 years)	10.242	3.054	1845	1710	1.216	.298	4.134	16.351
Under-five mortality rate (0-9 years)	51.908	7.753	1849	1717	1.414	.149	36.402	67.414

NA = Not applicable

Table B.5 Sampling errors - Almaty City, Kazakstan 1995

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
Primary/secondary education	.259	.018	615	271	1.043	.071	.222	.295
Secondary-special education	.333	.021	615	271	1.080	.062	.292	.374
Higher education	.408	.021	615	271	1.038	.050	.367	.449
Never married (in union)	.220	.017	615	271	1.028	.078	.185	.254
Currently married (in union)	.603	.022	615	271	1.098	.036	.560	.647
Married before age 20	.287	.022	439	194	1.031	.078	.242	.332
Had first sexual intercourse before 18	.100	.015	439	194	1.044	.149	.070	.130
Children ever born	1.247	.042	615	271	.907	.033	1.164	1.331
Cbildren ever born to women over 40	1.938	.087	162	71	.929	.045	1.763	2.113
Children surviving	1.192	.038	615	271	.850	.032	1.117	1.267
Knowing any contraceptive method	1.000	.000	371	164	Und	Und	1.000	1.000
Knowing any modern method	1.000	.000	371	164	Und	Und	1.000	1.000
Ever used any contraceptive method	.941	.014	371	164	1.128	.015	.913	.968
Currently using any method	.644	.026	371	164	1.042	.040	.592	.696
Currently using a modern method	.472	.028	371	164	1.073	.059	.416	.527
Currently using pill	.051	.008	371	164	.730	.163	.034	.068
Currently using IUD	.299	.026	371	164	1.096	.087	.247	.351
Currently using condom	.092	.019	371	164	1.239	.203	.054	.129
Currently using periodic abstinence	.113	.013	371	164	.772	.112	.088	.139
Currently using withdrawal	.019	.009	371	164	1.230	.461	.001	.036
Using public sector source	.826	.028	224	99	1.105	.034	.770	.882
Want no more children	.504	.024	371	164	.913	.047	.457	.551
Want to delay at least 2 years	.208	.020	371	164	.945	.096	.168	.247
Ideal number of children	2.535	.042	596	263	.896	.017	2.451	2.619
Severe anemia	.011	.005	564	249	1.196	.486	.000	.021
Moderate anemia	.094	.014	564	249	1.111	.145	.067	.121
Mild anemia	.277	.027	564	249	1.457	.099	.222	.332
BMI < 18.5	.061	.011	572	252	1.079	.177	.040	.083
BMI between 18.5 and 30.0	.787	.017	572	252	.998	.022	.752	.821
BMI > 30.0	.152	.012	572	252	.809	.080	.128	.176
Weight-for-height	.017	.005	572	252	.856	.269	.008	.027
Mothers received medical care at birth	1.000	.000	81	36	Und	Und	1.000	1.000
Had diarrhea in the last 2 weeks	.091	.028	77	34	.844	.306	.035	.147
Treated with ORS packets	.143	.129	7	3	.975	.904	.000	.401
Consulted medical personnel	.143	.129	7	3	.975	.904	.000	.401
Having health card, seen	.250	.077	28	12	.938	.307	.096	.404
Received BCG vaccination	1.000	.000	28	12	Und	Und	1.000	1.000
Received DPT vaccination (3 doses)	.607	.078	28	12	.849	.129	.450	.764
Received polio vaccination (3 doses)	.607	.108	28	12	1.171	.178	.391	.824
Received measles vaccination	.679	.088	28	12	.997	.130	.502	.855
Fully immunized	.429	.106	28	12	1.133	.247	.216	.641
Severe anemia	.015	.015	65	29	1.012	1.006	.000	.046
Moderate anemia	.200	.051	65	29	1.046	.255	.098	.302
Mild anemia	.262	.038	65	29	.700	.144	.186	.337
Weight-for-height	.016	.016	62	27	.995	.989	.000	.048
Height-for-age	.032	.022	62	27	.991	.691	.000	.077
Weight-for-age	.065	.031	62	27	Und	.477	.003	.126

Und = Undefined

Table B.6 Sampling errors - South Region, Kazakstan 1995

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
Primary/secondary education	.454	.039	920	1206	2.350	.085	.377	.531
Secondary-special education	.401	.028	920	1206	1.727	.070	.345	.457
Higher education	.142	.016	920	1206	1.354	.110	.111	.174
Never married (in union)	.253	.014	920	1206	.942	.053	.226	.280
Currently married (in union)	.672	.014	920	1206	.886	.020	.645	.700
Married before age 20	.361	.024	571	758	1.210	.067	.312	.410
Had first sexual intercourse before 18	.122	.017	571	758	1.208	.135	.089	.156
Children ever born	2.131	.080	920	1206	1.129	.037	1.972	2.291
Children ever born to women over 40	4.269	.201	171	232	1.066	.047	3.867	4.671
Children surviving	1.989	.078	920	1206	1.193	.039	1.832	2.145
Knowing any contraceptive method	.984	.005	621	810	1.017	.005	.974	.994
Knowing any modern method	.984	.005	621	810	1.017	.005	.974	.994
Ever used any contraceptive method	.712	.027	621	810	1.504	.038	.658	.767
Currently using any method	.502	.022	621	810	1.084	.043	.458	.545
Currently using a modern method	.443	.020	621	810	1.020	.046	.402	.483
Currently using pill	.006	.003	621	810	1.110	.595	.000	.012
Currently using IUD	.415	.021	621	810	1.044	.050	.373	.456
Currently using condom	.016	.004	621	810	.818	.257	.008	.024
Currently using periodic abstinence	.033	.008	621	810	1.103	.241	.017	.049
Currently using withdrawal	.008	.005	621	810	1.308	.572	.000	.018
Using public sector source	.955	.014	281	367	1.096	.014	.928	.982
Want no more children	.518	.021	621	810	1.035	.040	.476	.559
Want to delay at least 2 years	.247	.014	621	810	.819	.057	.219	.276
Ideal number of children	3.606	.094	895	1175	1.708	.026	3.418	3.794
Severe anemia	.008	.003	901	1177	.935	.355	.002	.013
Moderate anemia	.106	.012	901	1177	1.199	.116	.082	.131
Mild anemia	.389	.015	901	1177	.951	.040	.358	.420
BMI < 18.5	.084	.007	834	1096	.747	.085	.070	.098
BMI between 18.5 and 30.0	.793	.013	834	1096	.915	.016	.768	.819
BMI > 30.0	.123	.016	834	1096	1.420	.132	.090	.155
Weight-for-height	.042	.008	832	1094	1.108	.184	.026	.057
Mothers received medical care at birth	.991	.005	292	373	.919	.005	.981	1.000
Had diarrhea in the last 2 weeks	.129	.028	280	358	1.315	.219	.073	.186
Treated with ORS packets	.524	.088	36	46	1.043	.169	.347	.701
Consulted medical personnel	.281	.102	36	46	1.232	.365	.076	.485
Having health card, seen	.017	.012	106	133	.900	.681	.000	.040
Received BCG vaccination	.949	.024	106	133	1.103	.025	.901	.997
Received DPT vaccination (3 doses)	.305	.055	106	133	1.197	.180	.195	.415
Received polio vaccination (3 doses)	.365	.057	106	133	1.194	.157	.250	.479
Received measles vaccination	.640	.050	106	133	1.030	.078	.540	.740
Fully immunized	.157	.036	106	133	1.000	.230	.085	.229
Severe anemia	.074	.015	253	319	.932	.208	.043	.105
Moderate anemia	.328	.025	253	319	.824	.075	.279	.378
Mild anemia	.327	.032	253	319	1.066	.097	.263	.391
Weight-for-height	.059	.013	251	318	.875	.225	.032	.085
Height-for-age	.227	.029	251	318	1.074	.128	.169	.285
Weight-for-age	.110	.023	251	318	1.133	.212	.063	.156

Table B.7 Sampling errors - West Region, Kazakstan 1995

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
Primary/secondary education	.414	.019	830	477	1.082	.045	.377	.451
Secondary-special education	.424	.024	830	477	1.416	.057	.375	.473
Higher education	.161	.023	830	477	1.833	.145	.114	.207
Never married (in union)	.268	.012	830	477	.776	.045	.244	.291
Currently married (in union)	.625	.014	830	477	.842	.023	.596	.653
Married before age 20	.256	.022	555	321	1.213	.088	.211	.301
Had first sexual intercourse before 18	.068	.013	555	321	1.181	.186	.043	.093
Children ever born	1.922	.051	830	477	.756	.027	1.819	2.024
Children ever born to women over 40	3.423	.157	197	116	1.018	.046	3.109	3.737
Children surviving	1.781	.045	830	477	.732	.025	1.692	1.870
Knowing any contraceptive method	.994	.002	522	298	.662	.002	.989	.998
Knowing any modern method	.994	.002	522	298	.662	.002	.989	.998
Ever used any contraceptive method	.794	.029	522	298	1.626	.036	.737	.852
Currently using any method	.519	.029	522	298	1.346	.057	.460	.578
Currently using a modern method	.416	.024	522	298	1.112	.058	.368	.464
Currently using pill	.008	.005	522	298	1.301	.618	.000	.019
Currently using IUD	.375	.023	522	298	1.069	.060	.330	.421
Currently using condom	.030	.009	522	298	1.213	.301	.012	.048
Currently using periodic abstinence	.062	.012	522	298	1.125	.192	.038	.086
Currently using withdrawal	.015	.006	522	298	1.068	.384	.003	.026
Using public sector source	.943	.012	239	137	.820	.013	.918	.968
Want no more children	.594	.019	522	298	.906	.033	.555	.633
Want to delay at least 2 years	.178	.022	522	298	1.285	.121	.135	.221
Ideal number of children	3.011	.067	771	444	1.374	.022	2.876	3.145
Severe anemia	.025	.006	801	458	1.120	.248	.013	.037
Moderate anemia	.164	.016	801	458	1.201	.096	.133	.196
Mild anemia	.400	.025	801	458	1.455	.063	.350	.450
BMI < 18.5	.106	.010	759	437	.938	.099	.085	.127
BMI between 18.5 and 30.0	.771	.013	759	437	.871	.017	.745	.798
BMI > 30.0	.123	.017	759	437	1.390	.135	.090	.156
Weight-for-height	.066	.010	756	435	1.052	.143	.047	.085
Mothers received medical care at birth	1.000	.000	196	106	Und	Und	1.000	1.000
Had diarrhea in the last 2 weeks	.118	.033	186	101	1.369	.280	.052	.183
Treated with ORS packets	.350	.078	21	12	.746	.224	.193	.506
Consulted medical personnel	.293	.119	21	12	1.187	.406	.055	.530
Having health card, seen	.031	.022	67	37	1.034	.717	.000	.076
Received BCG vaccination	.987	.013	67	37	.903	.013	.962	1.000
Received DPT vaccination (3 doses)	.475	.070	67	37	1.131	.148	.335	.616
Received polio vaccination (3 doses)	.369	.079	67	37	1.323	.215	.210	.528
Received measles vaccination	.779	.045	67	37	.868	.057	.690	.869
Fully immunized	.262	.055	67	37	1.003	.209	.153	.372
Severe anemia	.077	.025	173	93	1.247	.332	.026	.127
Moderate anemia	.473	.039	173	93	.991	.083	.394	.551
Mild anemia	.260	.039	173	93	1.099	.149	.182	.337
Weight-for-height	.037	.011	175	95	.773	.310	.014	.059
Height-for-age	.109	.023	175	95	.913	.212	.063	.155
Weight-for-age	.067	.014	175	95	.762	.216	.038	.096

Und = Undefined

Table B.8 Sampling errors - Central Region, Kazakstan 1995

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
Primary/secondary education	.311	.018	726	358	1.061	.059	.274	.347
Secondary-special education	.500	.017	726	358	.917	.034	.466	.534
Higher education	.187	.013	726	358	.926	.072	.161	.214
Never married (in union)	.244	.015	726	358	.923	.060	.214	.273
Currently married (in union)	.655	.018	726	358	.996	.027	.620	.691
Married before age 20	.304	.024	486	241	1.148	.079	.256	.352
Had first sexual intercourse before 18	.091	.011	486	241	.863	.124	.069	.114
Children ever born	1.816	.065	726	358	.953	.036	1.687	1.945
Children ever born to women over 40	3.167	.193	166	83	1.126	.061	2.780	3.554
Children surviving	1.710	.059	726	358	.948	.034	1.592	1.827
Knowing any contraceptive method	.995	.005	477	235	1.484	.005	.986	1.000
Knowing any modern method	.993	.005	477	235	1.345	.005	.983	1.000
Ever used any contraceptive method	.869	.020	477	235	1.277	.023	.829	.908
Currently using any method	.662	.024	477	235	1.124	.037	.613	.711
Currently using a modern method	.525	.027	477	235	1.187	.052	.471	.579
Currently using pill	.015	.007	477	235	1.317	.490	.000	.030
Currently using IUD	.448	.031	477	235	1.350	.069	.387	.510
Currently using condom	.046	.011	477	235	1.137	.237	.024	.068
Currently using periodic abstinence	.053	.013	477	235	1.281	.247	.027	.080
Currently using withdrawal	.027	.009	477	235	1.226	.337	.009	.045
Using public sector source	.923	.020	269	133	1.214	.021	.883	.962
Want no more children	.640	.015	477	235	.701	.024	.610	.671
Want to delay at least 2 years	.117	.016	477	235	1.110	.139	.085	.150
Ideal number of children	2.777	.063	689	341	1.309	.023	2.651	2.903
Severe anemia	.007	.003	718	354	1.024	.451	.001	.014
Moderate anemia	.080	.011	718	354	1.088	.138	.058	.102
Mild anemia	.351	.016	718	354	.880	.045	.319	.382
BMI < 18.5	.087	.016	690	341	1.485	.184	.055	.118
BMI between 18.5 and 30.0	.751	.018	690	341	1.083	.024	.716	.787
BMI > 30.0	.162	.014	690	341	.989	.086	.134	.190
Weight-for-height	.038	.010	689	340	1.391	.268	.017	.058
Mothers received medical care at birth	1.000	.000	177	84	Und	Und	1.000	1.000
Had diarrhea in the last 2 weeks	.169	.031	171	82	1.081	.184	.107	.231
Treated with ORS packets	.269	.106	29	14	1.258	.392	.058	.481
Consulted medical personnel	.166	.072	29	14	1.015	.430	.023	.309
Having health card, seen	.492	.091	61	29	1.396	.185	.310	.674
Received BCG vaccination	.940	.019	61	29	.622	.021	.902	.979
Received DPT vaccination (3 doses)	.613	.083	61	29	1.305	.135	.447	.779
Received polio vaccination (3 doses)	.553	.072	61	29	1.103	.129	.410	.696
Received measles vaccination	.678	.079	61	29	1.300	.117	.520	.837
Fully immunized	.342	.085	61	29	1.372	.248	.172	.512
Severe anemia	.051	.016	153	73	.901	.322	.018	.083
Moderate anemia	.400	.036	153	73	.878	.091	.327	.473
Mild anemia	.217	.033	153	73	.999	.152	.151	.283
Weight-for-height	.012	.008	150	72	.903	.678	.000	.029
Height-for-age	.215	.038	150	72	1.060	.176	.139	.290
Weight-for-age	.084	.020	150	72	.905	.242	.043	.125

Und = Undefined

Table B.9 Sampling errors - North and East Region, Kazakstan 1995

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
Primary/secondary education	.308	.017	680	1458	.978	.056	.274	.343
Secondary-special education	.525	.025	680	1458	1.296	.047	.475	.574
Higher education	.167	.022	680	1458	1.555	.133	.122	.211
Never married (in union)	.209	.015	680	1458	.939	.070	.180	.238
Currently married (in union)	.686	.019	680	1458	1.081	.028	.647	.724
Married before age 20	.376	.032	474	1022	1.440	.085	.312	.441
Had first sexual intercourse before 18	.140	.019	474	1022	1.171	.134	.102	.177
Children ever born	1.625	.044	680	1458	.806	.027	1.538	1.713
Children ever born to women over 40	2.538	.115	179	389	.994	.045	2.308	2.768
Children surviving	1.560	.038	680	1458	.751	.024	1.485	1.636
Knowing any contraceptive method	.998	.002	466	1000	.971	.002	.994	1.000
Knowing any modern method	.998	.002	466	1000	.971	.002	.994	1.000
Ever used any contraceptive method	.920	.013	466	1000	1.008	.014	.895	.945
Currently using any method	.660	.027	466	1000	1.236	.041	.605	.714
Currently using a modern method	.472	.021	466	1000	.917	.045	.429	.514
Currently using pill	.026	.007	466	1000	.950	.271	.012	.040
Currently using IUD	.390	.021	466	1000	.948	.055	.347	.433
Currently using condom	.045	.007	466	1000	.742	.158	.031	.060
Currently using periodic abstinence	.086	.015	466	1000	1.120	.169	.057	.116
Currently using withdrawal	.059	.012	466	1000	1.137	.211	.034	.084
Using public sector source	.916	.024	246	531	1.356	.026	.868	.964
Want no more children	.658	.015	466	1000	.681	.023	.628	.688
Want to delay at least 2 years	.152	.014	466	1000	.824	.090	.124	.179
Ideal number of children	2.464	.044	651	1397	1.031	.018	2.376	2.552
Severe anemia	.011	.005	674	1445	1.300	.469	.001	.022
Moderate anemia	.095	.015	674	1445	1.316	.156	.066	.125
Mild anemia	.368	.021	674	1445	1.130	.057	.326	.410
BMI < 18.5	.067	.009	652	1399	.966	.141	.048	.086
BMI between 18.5 and 30.0	.713	.014	652	1399	.805	.020	.684	.741
BMI > 30.0	.220	.016	652	1399	1.006	.074	.188	.253
Weight-for-height	.032	.007	651	1397	1.052	.226	.018	.047
Mothers received medical care at birth	1.000	.000	100	210	Und	Und	1.000	1.000
Had diarrhea in the last 2 weeks	.233	.040	97	204	.872	.169	.154	.312
Treated with ORS packets	.041	.039	23	48	.912	.939	.000	.118
Consulted medical personnel	.260	.109	23	48	1.052	.418	.042	.478
Having health card, seen	.029	.028	32	68	.953	.984	.000	.085
Received BCG vaccination	1.000	.000	32	68	Und	Und	1.000	1.000
Received DPT vaccination (3 doses)	.486	.076	32	68	.850	.156	.335	.637
Received polio vaccination (3 doses)	.726	.079	32	68	.998	.109	.568	.885
Received measles vaccination	.659	.079	32	68	.941	.121	.500	.817
Fully immunized	.289	.069	32	68	.859	.240	.150	.427
Severe anemia	.020	.002	95	199	.154	.112	.015	.024
Moderate anemia	.279	.038	95	199	.834	.137	.203	.356
Mild anemia	.317	.055	95	199	1.121	.174	.206	.428
Weight-for-height	.000	.000	97	204	Und	Und	.000	.000
Height-for-age	.070	.036	97	204	1.377	.518	.000	.143
Weight-for-age	.051	.019	97	204	.856	.380	.012	.090

Und = Undefined

Table B.10 Sampling errors - Kazak ethnic group, Kazakstan 1995

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
Primary/secondary education	.391	.015	1937	1696	1.314	.037	.362	.420
Secondary-special education	.402	.013	1937	1696	1.173	.032	.376	.429
Higher education	.206	.013	1937	1696	1.443	.064	.180	.233
Never married (in union)	.289	.009	1937	1696	.885	.032	.271	.307
Currently married (in union)	.627	.012	1937	1696	1.063	.019	.604	.651
Married before age 20	.249	.014	1224	1068	1.172	.058	.220	.278
Had first sexual intercourse before 18	.068	.008	1224	1068	1.133	.120	.052	.084
Children ever born	2.029	.042	1937	1696	.876	.021	1.945	2.113
Children ever born to women over 40	4.212	.129	361	321	1.037	.031	3.954	4.470
Children surviving	1.876	.038	1937	1696	.876	.020	1.800	1.953
Knowing any contraceptive method	.987	.004	1212	1064	1.074	.004	.980	.994
Knowing any modern method	.986	.004	1212	1064	1.064	.004	.979	.993
Ever used any contraceptive method	.756	.016	1212	1064	1.333	.022	.723	.789
Currently using any method	.535	.017	1212	1064	1.154	.031	.502	.568
Currently using a modern method	.468	.015	1212	1064	1.026	.031	.438	.497
Currently using pill	.005	.003	1212	1064	1.344	.524	.000	.011
Currently using IUD	.436	.015	1212	1064	1.072	.035	.405	.467
Currently using condom	.020	.005	1212	1064	1.204	.243	.010	.030
Currently using periodic abstinence	.040	.006	1212	1064	1.135	.160	.027	.053
Currently using withdrawal	.007	.002	1212	1064	.969	.344	.002	.011
Using public sector source	.941	.013	604	531	1.373	.014	.915	.967
Want no more children	.541	.018	1212	1064	1.225	.032	.506	.576
Want to delay at least 2 years	.242	.014	1212	1064	1.177	.060	.213	.271
Ideal number of children	3.416	.056	1833	1618	1.580	.016	3.304	3.528
Severe anemia	.019	.004	1885	1654	1.321	.221	.010	.027
Moderate anemia	.143	.011	1885	1654	1.352	.076	.122	.165
Mild anemia	.407	.014	1885	1654	1.275	.035	.378	.436
BMI < 18.5	.110	.007	1777	1564	.930	.063	.096	.123
BMI between 18.5 and 30.0	.781	.010	1777	1564	1.029	.013	.761	.802
BMI > 30.0	.109	.011	1777	1564	1.457	.099	.088	.131
Weight-for-height	.062	.007	1771	1558	1.266	.117	.047	.076
Mothers received medical care at birth	.993	.004	564	487	1.126	.004	.985	1.000
Had diarrhea in the last 2 weeks	.162	.023	537	464	1.392	.145	.115	.209
Treated with ORS packets	.368	.069	77	75	1.270	.187	.231	.506
Consulted medical personnel	.333	.076	77	75	1.356	.228	.181	.484
Having health card, seen	.094	.018	194	167	.844	.190	.058	.130
Received BCG vaccination	.962	.016	194	167	1.165	.017	.930	.994
Received DPT vaccination (3 doses)	.389	.048	194	167	1.361	.124	.293	.486
Received polio vaccination (3 doses)	.392	.048	194	167	1.344	.122	.297	.487
Received measles vaccination	.677	.035	194	167	1.012	.051	.608	.747
Fully immunized	.191	.033	194	167	1.156	.173	.125	.257
Severe anemia	.089	.013	487	420	.978	.141	.064	.114
Moderate anemia	.406	.020	487	420	.911	.050	.365	.446
Mild anemia	.282	.022	487	420	1.050	.077	.239	.326
Weight-for-height	.036	.009	486	421	1.045	.244	.019	.054
Height-for-age	.211	.024	486	421	1.273	.115	.163	.260
Weight-for-age	.103	.017	486	421	1.199	.162	.070	.137
Total fertility rate (3 years)	3.106	.197	NA	4784	1.574	.063	2.713	3.500
Neonatal mortality rate (0-4 years)	18.445	4.829	981	865	1.129	.262	8.787	28.104
Postneonatal mortality rate (0-4 years)	30.427	6.902	983	866	1.217	.227	16.623	44.232
Infant mortality rate (0-4 years)	48.873	7.279	983	866	1.055	.149	34.315	63.430
Child mortality rate (0-4 years)	6.679	2.888	984	866	1.001	.432	0.902	12.455
Under-five mortality rate (0-4 years)	55.225	8.470	986	868	1.106	.153	38.285	72.164

NA = Not applicable

Table B.11 Sampling errors - Russian ethnic group, Kazakstan 1995

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
Primary/secondary education	.272	.019	1178	1308	1.440	.069	.235	.309
Secondary-special education	.544	.023	1178	1308	1.595	.043	.498	.591
Higher education	.182	.022	1178	1308	1.996	.123	.137	.227
Never married (in union)	.175	.012	1178	1308	1.124	.071	.150	.200
Currently married (in union)	.711	.013	1178	1308	1.013	.019	.684	.738
Married before age 20	.405	.021	833	932	1.255	.053	.363	.448
Had first sexual intercourse before 18	.162	.015	833	932	1.212	.096	.131	.193
Children ever born	1.534	.047	1178	1308	1.320	.031	1.440	1.629
Children ever born to women over 40	2.251	.065	348	372	.997	.029	2.122	2.381
Children surviving	1.483	.043	1178	1308	1.259	.029	1.396	1.569
Knowing any contraceptive method	1.000	.000	798	930	Und	Und	1.000	1.000
Knowing any modern method	1.000	.000	798	930	Und	Und	1.000	1.000
Ever used any contraceptive method	.914	.013	798	930	1.336	.015	.888	.941
Currently using any method	.651	.025	798	930	1.486	.039	.601	.701
Currently using a modern method	.453	.021	798	930	1.188	.046	.411	.495
Currently using pill	.039	.008	798	930	1.094	.191	.024	.054
Currently using IUD	.353	.020	798	930	1.185	.057	.313	.393
Currently using condom	.045	.008	798	930	1.050	.172	.029	.060
Currently using periodic abstinence	.096	.013	798	930	1.208	.131	.071	.121
Currently using withdrawal	.051	.011	798	930	1.431	.219	.028	.073
Using public sector source	.907	.022	428	488	1.575	.024	.862	.951
Want no more children	.632	.017	798	930	1.020	.028	.597	.667
Want to delay at least 2 years	.141	.016	798	930	1.309	.114	.109	.174
Ideal number of children	2.379	.038	1134	1261	1.184	.016	2.302	2.455
Severe anemia	.007	.003	1141	1282	1.221	.431	.001	.013
Moderate anemia	.072	.009	1141	1282	1.196	.127	.053	.090
Mild anemia	.338	.021	1141	1282	1.473	.061	.297	.379
BMI < 18.5	.052	.010	1115	1245	1.469	.188	.032	.071
BMI between 18.5 and 30.0	.741	.014	1115	1245	1.030	.018	.714	.768
BMI > 30.0	.207	.012	1115	1245	1.008	.059	.183	.232
Weight-for-height	.021	.007	1115	1245	1.530	.315	.008	.034
Mothers received medical care at birth	1.000	.000	155	175	Und	Und	1.000	1.000
Had diarrhea in the last 2 weeks	.188	.037	150	171	1.164	.197	.114	.262
Treated with ORS packets	.035	.025	24	32	.729	.716	.000	.084
Consulted medical personnel	.170	.088	24	32	1.259	.517	.000	.346
Having health card, seen	.056	.020	50	57	.626	.360	.016	.096
Received BCG vaccination	1.000	.000	50	57	Und	Und	1.000	1.000
Received DPT vaccination (3 doses)	.492	.082	50	57	1.175	.167	.328	.656
Received polio vaccination (3 doses)	.749	.063	50	57	1.042	.084	.623	.875
Received measles vaccination	.632	.066	50	57	.984	.105	.499	.764
Fully immunized	.301	.078	50	57	1.217	.259	.145	.456
Severe anemia	.000	.000	137	159	Und	Und	.000	.000
Moderate anemia	.275	.033	137	159	.901	.121	.209	.342
Mild anemia	.310	.048	137	159	1.187	.153	.215	.405
Weight-for-height	.017	.011	135	161	1.075	.688	.000	.039
Height-for-age	.072	.033	135	161	1.516	.452	.007	.137
Weight-for-age	.043	.021	135	161	1.224	.483	.001	.084
Total fertility rate (3 years)	1.691	.166	NA	3736	1.413	.098	1.358	2.024
Neonatal mortality rate (0-4 years)	20.069	12.914	277	318	1.565	0.644	0.000	45.898
Postneonatal mortality rate (0-4 years)	0.000	0.000	277	318	Und	Und	0.000	0.000
Infant mortality rate (0-4 years)	20.069	12.914	277	318	1.565	0.644	0.000	45.898
Child mortality rate (0-4 years)	6.818	6.898	277	318	1.465	1.012	0.000	20.614
Under-five mortality rate (0-4 years)	26.750	14.162	277	318	1.514	0.529	0.000	55.074

Und = Undefined
NA = Not applicable

Table B.12 Sampling errors - Other ethnic groups, Kazakstan 1995

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
Primary/secondary education	.466	.039	656	766	2.012	.084	.388	.545
Secondary-special education	.425	.033	656	766	1.692	.077	.360	.490
Higher education	.107	.016	656	766	1.288	.145	.076	.138
Never married (in union)	.215	.018	656	766	1.119	.083	.179	.251
Currently married (in union)	.669	.022	656	766	1.188	.033	.625	.713
Married before age 20	.421	.026	468	535	1.124	.061	.370	.473
Had first sexual intercourse before 18	.141	.017	468	535	1.079	.123	.106	.175
Children ever born	1.823	.082	656	766	1.179	.045	1.660	1.987
Children ever born to women over 40	2.954	.226	166	199	1.351	.077	2.502	3.407
Children surviving	1.744	.080	656	766	1.229	.046	1.585	1.904
Knowing any contraceptive method	.992	.004	447	513	1.011	.004	.984	1.000
Knowing any modern method	.992	.004	447	513	1.011	.004	.984	1.000
Ever used any contraceptive method	.852	.033	447	513	1.966	.039	.786	.918
Currently using any method	.599	.036	447	513	1.538	.060	.527	.670
Currently using a modern method	.460	.028	447	513	1.185	.061	.404	.516
Currently using pill	.005	.002	447	513	.527	.370	.001	.008
Currently using IUD	.389	.030	447	513	1.313	.078	.328	.449
Currently using condom	.060	.009	447	513	.781	.147	.042	.077
Currently using periodic abstinence	.060	.011	447	513	.984	.184	.038	.082
Currently using withdrawal	.050	.014	447	513	1.337	.277	.022	.077
Using public sector source	.922	.025	227	247	1.417	.027	.872	.973
Want no more children	.632	.025	447	513	1.085	.039	.582	.682
Want to delay at least 2 years	.151	.020	447	513	1.173	.132	.111	.191
Ideal number of children	2.839	.113	635	742	2.048	.040	2.613	3.066
Severe anemia	.003	.003	632	747	1.311	.949	.000	.009
Moderate anemia	.082	.012	632	747	1.087	.145	.058	.106
Mild anemia	.347	.018	632	747	.972	.053	.310	.384
BMI < 18.5	.057	.010	615	716	1.064	.174	.037	.077
BMI between 18.5 and 30.0	.718	.017	615	716	.932	.024	.684	.752
BMI > 30.0	.225	.016	615	716	.976	.073	.192	.258
Weight-for-height	.021	.008	614	716	1.328	.364	.006	.037
Mothers received medical care at birth	1.000	.000	127	148	Und	Und	1.000	1.000
Had diarrhea in the last 2 weeks	.107	.046	124	144	1.614	.427	.016	.198
Treated with ORS packets	.375	.110	15	15	.822	.293	.155	.594
Consulted medical personnel	.072	.057	15	15	.798	.789	.000	.187
Having health card, seen	.070	.032	50	55	.858	.456	.006	.133
Received BCG vaccination	.951	.034	50	55	1.084	.036	.884	1.000
Received DPT vaccination (3 doses)	.423	.056	50	55	.780	.132	.311	.535
Received polio vaccination (3 doses)	.484	.089	50	55	1.226	.184	.306	.662
Received measles vaccination	.680	.090	50	55	1.330	.132	.500	.861
Fully immunized	.296	.072	50	55	1.088	.244	.152	.440
Severe anemia	.013	.012	115	135	1.199	.977	.000	.037
Moderate anemia	.190	.034	115	135	.922	.178	.122	.257
Mild anemia	.351	.052	115	135	1.226	.149	.246	.455
Weight-for-height	.040	.018	114	135	.953	.437	.005	.075
Height-for-age	.093	.028	114	135	1.017	.297	.038	.148
Weight-for-age	.068	.029	114	135	1.233	.429	.010	.127

Und = Undefined

APPENDIX C

DATA QUALITY TABLES

Table C.1 Household age distribution

Single-year age distribution of the de facto household population by sex (weighted), Kazakstan 1995

	Males		Females			Males		Females	
Age	Number	Percent	Number	Percent	Age	Number	Percent	Number	Percent
0	125	1.7	155	1.9	37	137	1.8	113	1.4
1	140	1.9	158	1.9	38	93	1.2	144	1.8
2	138	1.8	153	1.9	39	92	1.2	98	1.2
3	180	2.4	135	1.7	40	100	1.3	104	1.3
4	186	2.5	151	1.9	41	77	1.0	97	1.2
5	163	2.2	165	2.0	42	79	1.1	116	1.4
6	187	2.5	186	2.3	43	115	1.5	104	1.3
7	168	2.2	166	2.0	44	99	1.3	94	1.2
8	170	2.3	179	2.2	45	85	1.1	106	1.3
9	182	2.4	175	2.1	46	96	1.3	78	1.0
10	177	2.4	148	1.8	47	75	1.0	78	1.0
11	171	2.3	180	2.2	48	73	1.0	72	0.9
12	162	2.2	196	2.4	49	47	0.6	36	0.4
13	163	2.2	186	2.3	50	45	0.6	57	0.7
14	165	2.2	162	2.0	51	27	0.4	41	0.5
15	169	2.3	150	1.8	52	36	0.5	43	0.5
16	146	2.0	158	1.9	53	54	0.7	92	1.1
17	164	2.2	147	1.8	54	63	0.8	82	1.0
18	128	1.7	122	1.5	55	70	0.9	97	1.2
19	110	1.5	132	1.6	56	78	1.0	85	1.0
20	130	1.7	113	1.4	57	55	0.7	101	1.2
21	126	1.7	123	1.5	58	84	1.1	79	1.0
22	122	1.6	132	1.6	59	57	0.8	66	0.8
23	131	1.8	130	1.6	60	51	0.7	77	0.9
24	122	1.6	100	1.2	61	15	0.2	38	0.5
25	140	1.9	104	1.3	62	41	0.5	49	0.6
26	114	1.5	102	1.3	63	33	0.4	44	0.5
27	107	1.4	103	1.3	64	41	0.5	55	0.7
28	109	1.5	123	1.5	65	51	0.7	81	1.0
29	124	1.7	111	1.4	66	30	0.4	61	0.8
30	111	1.5	125	1.5	67	44	0.6	59	0.7
31	106	1.4	110	1.3	68	30	0.4	46	0.6
32	132	1.8	117	1.4	69	14	0.2	39	0.5
33	140	1.9	109	1.3	70+	162	2.2	456	5.6
34	110	1.5	120	1.5	Don't know/				
35	107	1.4	139	1.7	Missing	3	0.0	0	0.0
36	118	1.6	88	1.1					
					Total	7,495	100.0	8,141	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, Kazakstan 1995

Age	Household population of women		Interviewed women		Percent interviewed (weighted)
	Number	Percent	Number	Percent	
10-14	873	-	-	-	-
15-19	709	18.2	692	18.2	97.7
20-24	597	15.3	578	15.2	96.9
25-29	543	13.9	531	14.0	97.8
30-34	580	14.9	568	15.0	97.9
35-39	583	15.0	567	14.9	97.3
40-44	515	13.2	505	13.3	98.0
45-49	370	9.5	355	9.3	95.9
50-54	316	-	-	-	-
15-49	3,897	-	3,797	-	97.4

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), Kazakstan 1995

Subject	Reference group	Percentage missing information	Number of cases
Birth date	Births in last 15 years		
Month only		0.6	4,510
Month and year		0.0	4,510
Age at death	Deaths to births in last 15 years	0.3	221
Age/date at first union[1]	Ever-married women	0.0	2,886
Respondent's education	All women	0.0	3,771
Child's size at birth	Births in last 35 months	1.4	806
Anthropometry[2]	Living children age 0-35 months		
Height missing		6.6	779
Weight missing		6.2	779
Height or weight missing		6.6	779
Diarrhea in last 2 weeks	Living children age 0-35 months	1.6	779

[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, Kazakstan 1995

	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	135	5	140	100.0	100.0	100.0	74.1	422.2	78.5	NA	NA	NA	57	4	62	77	1	78
94	276	7	283	100.0	94.1	99.8	85.1	261.0	87.4	139.1	74.7	136.1	127	5	132	149	2	151
93	262	14	276	100.0	100.0	100.0	95.4	356.5	101.4	97.7	144.1	99.3	128	11	139	134	3	137
92	260	13	273	100.0	100.0	100.0	102.4	691.6	109.7	97.9	82.5	97.0	132	11	143	128	2	130
91	270	16	286	98.9	100.0	98.9	151.9	68.2	144.9	93.8	147.9	95.8	163	7	169	107	10	117
90	315	9	324	100.0	100.0	100.0	97.9	175.2	99.5	108.8	54.1	105.7	156	6	162	159	3	163
89	309	18	328	100.0	100.0	100.0	113.2	87.1	111.6	101.7	178.9	104.2	164	9	173	145	10	155
88	293	11	305	99.0	89.9	98.6	86.3	134.9	87.8	92.5	62.8	90.9	136	6	142	157	5	162
87	325	17	342	100.0	96.1	99.8	89.3	46.5	86.5	110.6	147.6	112.0	153	5	159	172	12	184
86	295	12	307	99.3	100.0	99.4	102.3	217.4	105.2	NA	NA	NA	149	8	157	146	4	149
91-95	1,202	56	1,258	99.7	99.2	99.7	101.7	219.8	105.1	NA	NA	NA	606	39	645	596	18	614
86-90	1,537	68	1,606	99.7	97.4	99.6	97.3	103.5	97.6	NA	NA	NA	758	35	793	779	34	813
81-85	1,446	88	1,534	99.4	94.9	99.2	100.9	122.7	102.0	NA	NA	NA	726	49	775	720	40	759
76-80	1,199	85	1,283	99.8	92.7	99.4	98.6	122.1	100.0	NA	NA	NA	595	46	642	604	38	642
< 76	1,075	90	1,165	99.3	95.1	99.0	107.1	121.0	108.1	NA	NA	NA	556	49	605	519	41	560
All	6,459	387	6,846	99.6	95.5	99.4	100.7	128.4	102.1	NA	NA	NA	3,242	218	3,459	3,218	169	3,387

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

Table C.5 Reporting of age at death in days

Distribution of reported deaths under one month of age by age at death in days and the percentage of neonatal deaths reported to occur at ages 0-6 days, for five-year periods preceding the survey, Kazakstan 1995

Age at death (in days)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
<1	3	1	3	7	13
1	4	0	7	3	15
2	3	3	7	4	17
3	0	6	2	4	12
4	0	2	2	1	5
5	0	2	0	0	2
6	0	0	0	1	1
7	0	5	2	0	7
8	0	1	0	2	3
9	2	0	0	0	2
10	0	1	3	1	6
11	2	0	0	0	2
12	1	0	0	0	1
13	0	1	0	0	1
14	2	0	1	0	3
15	0	1	0	0	1
18	1	0	2	0	3
19	1	0	0	0	1
20	5	2	1	0	8
25	2	0	0	0	2
27	0	2	0	0	3
Total 0-30	28	27	31	21	106
Percent early neonatal[1]	41.6	53.8	67.0	86.6	61.0

[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, Kazakstan 1995

Age at death (in months)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
<1[a]	28	27	31	21	106
1	3	6	5	5	19
2	2	6	6	6	20
3	2	3	6	5	16
4	1	7	5	3	16
5	4	0	2	1	8
6	0	5	1	3	10
7	6	2	6	3	18
8	3	3	5	3	13
9	3	1	2	1	7
10	1	0	0	4	4
11	2	0	4	6	13
12	0	1	0	2	3
13	0	0	0	1	2
17	0	2	0	0	2
18	0	1	1	0	3
24+	1	0	0	0	1
1 year	5	1	1	3	10
Total 0-11	54	60	73	62	250
Percent neonatal[b]	51.4	44.1	42.1	33.9	42.6

[a] Includes deaths under 1 month reported in days
[b] (Under 1 month/under 1 year) * 100

APPENDIX D

PERSONS INVOLVED IN THE 1995 KAZAKSTAN DEMOGRPHIC AND HEALTH SURVEY

APPENDIX D

PERSONS INVOLVED IN THE 1995 KAZAKSTAN DEMOGRAPHIC AND HEALTH SURVEY

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APPENDIX E

QUESTIONNAIRES

KAZAKHSTAN DEMOGRAPHIC AND HEALTH SURVEY QUESTIONNAIRE
HOUSEHOLD SCHEDULE

REPUBLIC OF KAZAKHSTAN
INSTITUTE OF NUTRITION

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 . . . . . □□□

INTERVIEWER VISIT

	1	2	3	FINAL VISIT
DATE	_____	_____	_____	DAY □□
				MONTH □□
				YEAR □□
INTERVIEWER'S NAME	_____	_____	_____	NAME □□
RESULT*	_____	_____	_____	RESULT □
NEXT VISIT: DATE	_____	_____		TOTAL NO. VISITS □
TIME	_____	_____		

* 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 HOUSEHOLD 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.

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD*	RESIDENCE		SEX	AGE	EDUCATION			PARENTAL SURVIVORSHIP AND RESIDENCE FOR PERSONS LESS THAN 15 YEARS OLD				ELIGIBILITY
							IF AGE 6 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 relationship of (NAME) to the head of the household?	Does (NAME) usually live here?	Did (NAME) stay here last night?	Is (NAME) male or female?	How old is (NAME)?	Has (NAME) ever been to school?	IF ATTENDED SCHOOL: 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?	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
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
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		01
02			1 2	1 2	1 2		1 2		1 2	1 2 8		1 2 8		02
03			1 2	1 2	1 2		1 2		1 2	1 2 8		1 2 8		03
04			1 2	1 2	1 2		1 2		1 2	1 2 8		1 2 8		04
05			1 2	1 2	1 2		1 2		1 2	1 2 8		1 2 8		05

HOUSEHOLD SCHEDULE CONTINUED

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
06			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		06
07			1 2	1 2	1 2		1 2		1 2	1 2 8		1 2 8		07
08			1 2	1 2	1 2		1 2		1 2	1 2 8		1 2 8		08
09			1 2	1 2	1 2		1 2		1 2	1 2 8		1 2 8		09
10			1 2	1 2	1 2		1 2		1 2	1 2 8		1 2 8		10
11			1 2	1 2	1 2		1 2		1 2	1 2 8		1 2 8		11
12			1 2	1 2	1 2		1 2		1 2	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.9
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
16	What is the main source of drinking water for members of your household?	PIPED WATER PIPED INTO RESIDENCE/YARD/PLOT . . . . . 11 → 18 PUBLIC TAP . . . . . 12 WELL WATER WELL IN RESIDENCE/YARD/PLOT . . . . . 21 → 18 PUBLIC WELL . . . . . 22 SURFACE WATER SPRING WATER . . . . . 31 RIVER/STREAM . . . . . 32 POND/LAKE . . . . . 33 DAM . . . . . 34 RAINWATER . . . . . 41 → 18 TANKER TRUCK . . . . . 51 BOTTLED WATER . . . . . 61 → 18 OTHER _____ 96 (SPECIFY)	
17	How long does it take to go there, get water, and come back?	MINUTES . . . . . ☐☐☐ ON PREMISES 996	
18	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)	
19	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	
20	How many rooms in your household are used for sleeping?	ROOMS . . . . . ☐☐	
21	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)	
22	Does any member of your household own A bicycle? A motorcycle? A car?	YES NO BICYCLE . . . . . 1 2 MOTORCYCLE . . . . . 1 2 CAR 1 2	
23	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)	

INDIVIDUAL WOMAN'S QUESTIONNAIRE

REPUBLIC OF KAZAKHSTAN
INSTITUTE OF NUTRITION

IDENTIFICATION

CITY/TOWN/VILLAGE NAME _____

NAME OF HOUSEHOLD HEAD _____

REGION . . . . . .

OBLAST . . . . . .

RAION . . . . . .

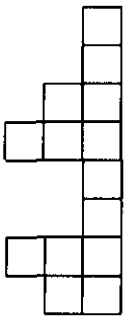
CLUSTER NUMBER . . . . . .

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 ☐☐ RESULT ☐
INTERVIEWER'S NAME	_____	_____	_____	
RESULT*	_____	_____	_____	
NEXT VISIT: DATE	_____	_____		TOTAL NO. VISITS ☐
TIME	_____	_____		

*RESULT CODES:

1 COMPLETED
2 NOT AT HOME
3 POSTPONED
4 REFUSED
5 PARTLY COMPLETED
6 INCAPACITATED
7 OTHER _____ (SPECIFY)

	KAZAKH	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 ☐☐ ALWAYS . . . 95 VISITOR . . . 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 . . . 98	
106	How old were you at your last birthday?	AGE IN COMPLETED YEARS ☐☐	
107	Have you ever attended school?	YES . . . 1 NO . . . 2 → 114	

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 OID NOT LIKE SCHOOL . . . . . 08 SCHOOL IS TOO FAR . . . . . 09 OTHER _____ (SPECIFY) 96 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

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 Kazakh? Russian? Ukrainian? German? Korean? Other?	KAZAKH . . . 1 RUSSIAN . . . 2 UKRAINIAN . . . 3 GERMAN . . . 4 KOREAN . . . 5 OTHER _____ 6 (SPECIFY) DON'T KNOW . . . 8	
119A	What language is easiest for you to read: Only Kazakh? Kazakh more than Russian? Both equally? Russian more than Kazakh? Only Russian? Other language?	ONLY KAZAKH . . . 1 MORE KAZAKH THAN RUSSIAN . . . 2 SAME KAZAKH AND RUSSIAN . . . 3 MORE RUSSIAN THAN KAZAKH . . . 4 ONLY RUSSIAN . . . 5 OTHER _____ 6 (SPECIFY)	

119B	What language do you usually speak at home: Only Kazakh? Kazakh more than Russian? Both equally? Russian more than Kazakh? Only Russian? Other language?	ONLY KAZAKH . . . . . 1 MORE KAZAKH THAN RUSSIAN . . . . . 2 SAME KAZAKH AND RUSSIAN . . . . . 3 MORE RUSSIAN THAN KAZAKH . . . . . 4 ONLY RUSSIAN . . . . . 5 OTHER _____ 6 (SPECIFY)
119C	Do you own dacha, or do you have access to a garden from which you obtain fruits and vegetables during the growing seasons?	YES . . . . . 1 NO . . . . . 2 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)
120	CHECK INTERVIEWER'S ASSIGNMENT SHEET: THE WOMAN INTERVIEWED IS NOT A USUAL RESIDENT ☐ THE WOMAN INTERVIEWED IS A USUAL RESIDENT ☐ → 201	
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?	OBLAST: AKMOLINSKAYA . . . . . 01 AKTIUBINSKAYA . . . . . 02 ALMATINSKAYA . . . . . 03 ATYRAUSKAYA . . . . . 04 EAST-KAZAKHSTANSKAYA . . . . . 05 ZHAMBYLSKAYA . . . . . 06 ZHEZKAZGANSKAYA . . . . . 07 WEST-KAZAKHSTANSKAYA . . . . . 08 KARAGANDINSKAYA . . . . . 09 KZYL-ORDINSKAYA . . . . . 10 KOKSHETAUSKAYA . . . . . 11 KOUSTANAISKAYA . . . . . 12 MANGISTAUSKAYA . . . . . 13 PAVLODARSKAYA . . . . . 14 NORTH-KAZAKHSTANSKAYA . . . . . 15 SEMIPALATINSKAYA . . . . . 16 TALDYKORGANSKAYA . . . . . 17 TOURGAISKAYA . . . . . 18 SOUTH-KAZAKHSTANSKAYA . . . . . 19 THE CITY OF ALMATY . . . . . 20 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 → 125 PUBLIC TAP . . . . . 12 WELL WATER WELL IN RESIDENCE/YARD/PLOT . . . . . 21 → 125 PUBLIC WELL . . . . . 22 SURFACE WATER SPRING WATER . . . . . 31 RIVER/STREAM . . . . . 32 POND/LAKE . . . . . 33 DAM . . . . . 34 RAINWATER . . . . . 41 → 125 TANKER TRUCK . . . . . 51 BOTTLED WATER . . . . . 61 → 125 OTHER _____ 96 (SPECIFY)	

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: 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
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 A bicycle? A motorcycle? A car?	YES NO BICYCLE 1 2 MOTORCYCLE 1 2 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	→ 206
205	How many sons are alive but do not live with you? And how many daughters are alive but do not live with you? IF NONE, RECORD '00'	SONS ELSEWHERE . . . [ ][ ] DAUGHTERS ELSEWHERE . . . [ ][ ]	
206	Have you ever given birth to a boy or 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

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	

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 When did your (last/next-to-last/ etc.) pregnancy end? In what month and year?	216 Did this pregnancy end in a live birth, an induced abortion, a miscarriage, or a stillbirth?	217 FROM YEAR OF LAST/NEXT-TO-THE LAST, ETC. PREGNANCY SUBTRACT YEAR OF PREVIOUS PREGNANCY. IS THE DIFFERENCE 4 OR MORE? TRY TO DETERMINE: IF THERE WAS ANOTHER PREGNANCY BETWEEN THIS AND PREVIOUS PREGNANCY.	218 CHECK 216: RECORD SAME RESPONSE	219 Was this a single or a multiple birth?	220 What name was given to this child?	221 Is (NAME) a boy or girl?	222 Is (NAME) still alive?	223 How old was (NAME) on his/ her last birthday? RECORD AGE IN COMPLETED YEARS	224 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 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 ___
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 ___

05 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
06 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
07 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
08 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

09 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
10 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
11 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
12 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

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 1992. IF NONE, RECORD '0'. ☐

No	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
227	Are you pregnant now?	YES . . . 1 NO . . . 2 UNSURE . . . 8 → 230	
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	
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	
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 _____ (SPECIFY) . . . 96 DON'T KNOW . . . 98	

Section 3. OUTCOME OF PREGNANCIES

301 CHECK 226

ONE OR MORE PREGNANCY SINCE JANUARY 1992 ☐ ↓

NO PREGNANCY SINCE JANUARY 1992 ☐ → (SKIP TO 458)

302 ENTER THE LINE NUMBER FOR EACH PREGNANCY ENDED SINCE JANUARY 1992 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	SECOND FROM LAST PREGNANCY	THIRD FROM LAST PREGNANCY
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
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 306) ←	THEN 1 (SKIP TO 306A) ← LATER 2 NO MORE 3 (SKIP TO 306) ←	THEN 1 (SKIP TO 306A) ← LATER 2 NO MORE 3 (SKIP TO 306) ←	THEN 1 (SKIP TO 306A) ← LATER 2 NO MORE 3 (SKIP TO 306) ←
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 ☐ →316 MISCARRIAGE ☐ →325 STILLBIRTH ☐ LIVE BIRTH ☐ ↓	INDUCED ABORTION ☐ →316 MISCARRIAGE ☐ →325 STILLBIRTH ☐ LIVE BIRTH ☐ ↓	INDUCED ABORTION ☐ →316 MISCARRIAGE ☐ →325 STILLBIRTH ☐ LIVE BIRTH ☐ ↓	INDUCED ABORTION ☐ →316 MISCARRIAGE ☐ →325 STILLBIRTH ☐ LIVE BIRTH ☐ ↓

		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 ________
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. RECORD ALL PERSONS SEEN.	HEALTH PROFESSIONAL DOCTOR . . . . . A NURSE/MIDWIFE . . . . . B NONMEDICAL PERSONS TRADITIONAL MIDWIFE . . . . . C RELATIVE/FRIEND . . . . . D OTHER ______ X (SPECIFY) NO ONE . . . . . Y (SKIP TO 312) ←	HEALTH PROFESSIONAL DOCTOR . . . . . A NURSE/MIDWIFE . . . . . B NONMEDICAL PERSONS TRADITIONAL MIDWIFE . . . . . C RELATIVE/FRIEND . . . . . D OTHER ______ X (SPECIFY) NO ONE . . . . . Y (SKIP TO 312) ←	HEALTH PROFESSIONAL DOCTOR . . . . . A NURSE/MIDWIFE . . . . . B NONMEDICAL PERSONS TRADITIONAL MIDWIFE . . . . . C RELATIVE/FRIEND . . . . . D OTHER ______ X (SPECIFY) NO ONE . . . . . Y (SKIP TO 312) ←	HEALTH PROFESSIONAL DOCTOR . . . . . A NURSE/MIDWIFE . . . . . B NONMEDICAL PERSONS TRADITIONAL MIDWIFE . . . . . C RELATIVE/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/stillbirth) take place?	HOME RESPONDENT'S HOME . . . . . 11 OTHER HOME . . . . . 12 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 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 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 HEALTH FACILITY OBGYN HOSPITAL . . . . . 21 HOSPITAL . . . . . 22 DOCTOR'S ASSISTANT/MIDWIFE POST (FAP) . . . . . 23 OTHER HEALTH FACILITY ______ 26 (SPECIFY) OTHER ______ 96 (SPECIFY)

313	Who assisted with the (delivery of NAME/stillbirth)? Anyone else? PROBE FOR THE TYPE OF PERSON. RECORD ALL PERSONS ASSISTING.	HEALTH PROFESSIONAL DOCTOR . . . . . A NURSE/MIDWIFE . . . . . B NONMEDICAL PERSONS TRADITIONAL MIDWIFE . . . . . C REALTIVE/FRIEND . . . . . D OTHER ______ X (SPECIFY) NO ONE . . . . . Y	HEALTH PROFESSIONAL DOCTOR . . . . . A NURSE/MIDWIFE . . . . . B NONMEDICAL PERSONS TRADITIONAL MIDWIFE . . . . . C REALTIVE/FRIEND . . . . . D OTHER ______ X (SPECIFY) NO ONE . . . . . Y	HEALTH PROFESSIONAL DOCTOR . . . . . A NURSE/MIDWIFE . . . . . B NONMEDICAL PERSONS TRADITIONAL MIDWIFE . . . . . C REALTIVE/FRIEND . . . . . D OTHER ______ X (SPECIFY) NO ONE . . . . . Y	HEALTH PROFESSIONAL DOCTOR . . . . . A NURSE/MIDWIFE . . . . . B NONMEDICAL PERSONS TRADITIONAL MIDWIFE . . . . . C REALTIVE/FRIEND . . . . . D OTHER ______ X (SPECIFY) NO ONE . . . . . Y
314	At the time of the (birth of (NAME)/stillbirth), 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

		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 __________
315	Was the (birth of (NAME)/stillbirth) by caesarian section?	YES . . . . . 1 NO . . . . . 2 → 325	YES . . . . . 1 NO . . . . . 2 → 325	YES . . . . . 1 NO . . . . . 2 → 325	YES . . . . . 1 NO . . . . . 2 → 325
316	Where was the induced abortion performed?	PUBLIC SECTOR HOSPITAL . . . . . 11 POLYCLINIC . . . . . 12 AMBULATORY . . . . . 13 MOBILE CLINIC . . . . . 14 OTHER HEALTH FACILITY ________ 16 (SPECIFY) PRIVATE SECTOR PRIVATE CLINIC . . . . . 21 PRIVATE DOCTOR . . . . . 22 OTHER PRIVATE HEALTH FACILITY ________ 26 (SPECIFY) PRIVATE PERSON (NON MEDICAL) . . 31 OTHER ________ 96 (SPECIFY)	PUBLIC SECTOR HOSPITAL . . . . . 11 POLYCLINIC . . . . . 12 AMBULATORY . . . . . 13 MOBILE CLINIC . . . . . 14 OTHER HEALTH FACILITY ________ 16 (SPECIFY) PRIVATE SECTOR PRIVATE CLINIC . . . . . 21 PRIVATE DOCTOR . . . . . 22 OTHER PRIVATE HEALTH FACILITY ________ 26 (SPECIFY) PRIVATE PERSON (NON MEDICAL) . 31 OTHER ________ 96 (SPECIFY)	PUBLIC SECTOR HOSPITAL . . . . . 11 POLYCLINIC . . . . . 12 AMBULATORY . . . . . 13 MOBILE CLINIC . . . . . 14 OTHER HEALTH FACILITY ________ 16 (SPECIFY) PRIVATE SECTOR PRIVATE CLINIC . . . . . 21 PRIVATE DOCTOR . . . . . 22 OTHER PRIVATE HEALTH FACILITY ________ 26 (SPECIFY) PRIVATE PERSON (NON MEDICAL) . 31 OTHER ________ 96 (SPECIFY)	PUBLIC SECTOR HOSPITAL . . . . . 11 POLYCLINIC . . . . . 12 AMBULATORY . . . . . 13 MOBILE CLINIC . . . . . 14 OTHER HEALTH FACILITY ________ 16 (SPECIFY) PRIVATE SECTOR PRIVATE CLINIC . . . . . 21 PRIVATE DOCTOR . . . . . 22 OTHER PRIVATE HEALTH 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 METHOO . . . . . 4 OTHER ________ 6 (SPECIFY) DON'T KNOW 8

No.	Question				
318	Who helped you to perform that procedure? RECORD ALL PERSONS ASSISTING.	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
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 (NO, DON'T KNOW) → 325	YES . . . . . 1 NO . . . . . 2 DON'T KNOW . . . . . 8 (NO, DON'T KNOW) → 325	YES . . . . . 1 NO . . . . . 2 DON'T KNOW . . . . . 8 (NO, DON'T KNOW) → 325	YES . . . . . 1 NO . . . . . 2 DON'T KNOW . . . . . 8 (NO, DON'T KNOW) → 325
320	What health problems did you have: pelvic pain? sterility? infection? lack of menstruation? bleeding? other? RECORD ALL REPORTED.	PELVIC PAIN . . . . . A STERILITY . . . . . B INFECTION . . . . . C LACK OF MENSTRUATION . . . . . D BLEEDING . . . . . E OTHER ______ X (SPECIFY) DON'T KNOW . . . . . Z	PELVIC PAIN . . . . . A STERILITY . . . . . B INFECTION . . . . . C LACK OF MENSTRUATION . . . . . D BLEEDING . . . . . E OTHER ______ X (SPECIFY) DON'T KNOW . . . . . Z	PELVIC PAIN . . . . . A STERILITY . . . . . B INFECTION . . . . . C LACK OF MENSTRUATION . . . . . D BLEEDING . . . . . E OTHER ______ X (SPECIFY) DON'T KNOW . . . . . Z	PELVIC PAIN . . . . . A STERILITY . . . . . B INFECTION . . . . . C LACK OF MENSTRUATION . . . . . D BLEEDING . . . . . E OTHER ______ X (SPECIFY) DON'T KNOW . . . . . Z
321	Did you seek care because of these complications?	YES . . . . . 1 NO . . . . . 2 (NO) → 325	YES . . . . . 1 NO . . . . . 2 (NO) → 325	YES . . . . . 1 NO . . . . . 2 (NO) → 325	YES . . . . . 1 NO . . . . . 2 (NO) → 325

		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
322	Where did you seek care? RECORD ALL MENTIONED	PUBLIC SECTOR HOSPITAL . . . . . A POLYCLINIC . . . . . B AMBULATORY . . . . . C MOBILE CLINIC . . . . . D OTHER HEALTH FACILITY _____ E (SPECIFY) PRIVATE HEALTH SECTOR PRIVATE CLINIC . . . . . F PRIVATE DOCTOR . . . . . G OTHER PRIVATE HEALTH FACILITY _____ H (SPECIFY) PRIVATE PERSON (NON MEDICAL) . . I OTHER _____ K (SPECIFY)	PUBLIC SECTOR HOSPITAL . . . . . A POLYCLINIC . . . . . B AMBULATORY . . . . . C MOBILE CLINIC . . . . . D OTHER HEALTH FACILITY _____ E (SPECIFY) PRIVATE HEALTH SECTOR PRIVATE CLINIC . . . . . F PRIVATE DOCTOR . . . . . G OTHER PRIVATE HEALTH FACILITY _____ H (SPECIFY) PRIVATE PERSON (NON MEDICAL) . . I OTHER _____ K (SPECIFY)	PUBLIC SECTOR HOSPITAL . . . . . A POLYCLINIC . . . . . B AMBULATORY . . . . . C MOBILE CLINIC . . . . . D OTHER HEALTH FACILITY _____ E (SPECIFY) PRIVATE SECTOR PRIVATE CLINIC . . . . . F PRIVATE DOCTOR . . . . . G OTHER PRIVATE HEALTH FACILITY _____ H (SPECIFY) PRIVATE PERSON (NON MEDICAL) . . J OTHER _____ K (SPECIFY)	PUBLIC SECTOR HOSPITAL . . . . . A POLYCLINIC . . . . . B AMBULATORY . . . . . C MOBILE CLINIC . . . . . D OTHER HEALTH FACILITY _____ E (SPECIFY) PRIVATE HEALTH SECTOR PRIVATE CLINIC . . . . . F PRIVATE DOCTOR . . . . . G OTHER PRIVATE HEALTH 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 1992 ☐ → (CONTINUE)

NO LIVE BIRTHS SINCE JANUARY 1992 ☐ → (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.

		LAST BIRTH	NEXT-TO-LAST BIRTH
403	LINE NUMBER FROM 303	LINE NUMBER ☐☐	LINE NUMBER ☐☐
404	NAME FROM 304	NAME _____	NAME _____
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) ←	[redacted]
411	Did your period return between the birth of (NAME) and your next pregnancy?	[redacted]	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 PREGNANT [ ] PREGNANT OR UNSURE [ ] → (SKIP TO 415)	[redacted]
414	Have you resumed sexual realtions since the birth of (NAME)?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 416) ←	[redacted]
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 ☐ → (SKIP TO 425) NOT ALIVE ☐ → (GO BACK TO 405 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 433)	ALIVE ☐ → (SKIP TO 425) NOT ALIVE ☐ → (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

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
431	On how many days during the last seven days was (NAME) given any of the following?	RECORD THE NUMBER OF DAYS	RECORD THE NUMBER OF DAYS
	Water?	WATER	WATER . . . . .
	Milk and fermented milk products?	MILK	MILK . . . . .
	Any other liquids?	OTHER LIQUIDS	OTHER LIQUIDS . . . . .
	Fruits and vegetables?	FRUITS AND VEGETABLES. . .	FRUITS AND VEGETABLES. . .
	Any food made from wheat, rice, maize, such as bread, noodles, pasta, etc.?	PASTA AND GRAIN	PASTA AND GRAIN . . . . .
	Any food made from potatoes, carrots, or tuber?	POTATOE AND OTHER TUBER.	POTATOE AND OTHER TUBER.
	Eggs, fish, poultry?	EGGS/FISH/POULTRY.	EGGS/FISH/POULTRY. . . . .
	Meat products.?	MEAT.	MEAT. . . . .
	Any other solid or semi-solid foods?	OTHER SOLID OR SEMI-SOLID FOODS	OTHER SOLID OR SEMI-SOLID FOODS
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 1992 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 LINE NUMBER	NEXT-TO-LAST BIRTH LINE NUMBER . . . . .
435	NAME FROM 404 SURVIVORSHIP STATUS FROM 418	NAME ALIVE ☐ NOT ALIVE ☐ (GO TO Q 435 IN NEXT COLUMN. IF NO MORE BIRTHS, GO TO 458).	NAME ALIVE ☐ NOT ALIVE ☐ (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? IF YES: May I see it please?	YES, SEEN . . . . . 1 (SKIP TO 438) YES, NOT SEEN . . . . . 2 (SKIP TO 440) NO CARD 3	YES, SEEN . . . . . 1 (SKIP TO 438) YES, NOT SEEN . . . . . 2 (SKIP TO 440) NO CARD 3
437	Did you ever have a vaccination card for (NAME)?	YES . . . . . 1 (SKIP TO 440) NO 2	YES . . . . . 1 (SKIP TO 440) NO 2

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
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:		
	POLIO 0 (AT THE HOSPITAL) — P0		
	POLIO 1 — P1		
	POLIO 2 — P2		
	POLIO 3 — P3		
	POLIO 4 — P4		
	POLIO 5 — P5		
	IMMUNIZATION AGAINST DIPHTHERIA, PERTUSSIS, TETANUS (DPT); OR AGAINST DIPHTHERIA AND TETANUS (DT)		
	DPT/DT 1 — D1		
	DPT/DT 2 — D2		
	DPT/DT 3 — D3		
	DPT-DT 4 — D4		
	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)

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	JUST AFTER BIRTH . . . 1 LATER . . . 2
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

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
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 MOBILE CLINIC . . . D SANITARY DOCTOR . . . E OTHER PUBLIC HEALTH FACILITY _____ (SPECIFY) F PRIVATE HEALTH SECTOR PRIVATE CLINIC . . . G PRIVATE PHARMACY . . . H PRIVATE DOCTOR . . . I OTHER PRIVATE HEALTH FACILITY _____ (SPECIFY) J OTHER PRIVATE SHOP . . . K PRIVATE PERSON (NON MEDICAL) L OTHER _____ (SPECIFY) X	PUBLIC SECTOR HOSPITAL . . . A POLYCLINIC . . . B AMBULATORY . . . C MOBILE CLINIC . . . D SANITARY DOCTOR . . . E OTHER PUBLIC HEALTH FACILITY _____ (SPECIFY) F PRIVATE HEALTH SECTOR PRIVATE CLINIC . . . G PRIVATE PHARMACY . . . H PRIVATE DOCTOR . . . I OTHER PRIVATE HEALTH FACILITY _____ (SPECIFY) J OTHER PRIVATE SHOP . . . K PRIVATE PERSON (NON MEDICAL) L OTHER _____ (SPECIFY) X

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)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
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 MOBILE CLINIC . . . . . D SANITARY DOCTOR . . . . . 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 MOBILE CLINIC . . . . . D SANITARY DOCTOR . . . . . 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 _____ (SPECIFY) . . . X 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 _____ (SPECIFY) . . . X 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 RECOGNIZED.

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	PROBED		
		YES	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 themselves before intercourse.	1	2	3	YES 1 NO 2

06	CONDOM. Men can use a rubber sheath during sexual intercourse.	1 2 3	YES ..... 1 NO 2
07	FEMALE STERILIZATION. Women can have an operation to avoid having any more children.	1 2 3	Have you ever had an operation to avoid having any more children? YES ..... 1 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 3	YES ..... 1 NO 2
10	WITHDRAWAL. Men can be careful pull out before climax.	1 2 3	YES ..... 1 NO 2
11	Have you heard of any other ways or methods that women or men can use to avoid pregnancy?	1 3 _____ (SPECIFY) _____ (SPECIFY)	YES ..... 1 NO ..... 2 YES ..... 1 NO 2

504 CHECK 503

NOT A SINGLE "YES" (NEVER USED) ☐

AT LEAST ONE "YES" (EVER USED) ☐ → SKIP TO 509

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 time began to use contraception, did you want to have another child but at 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

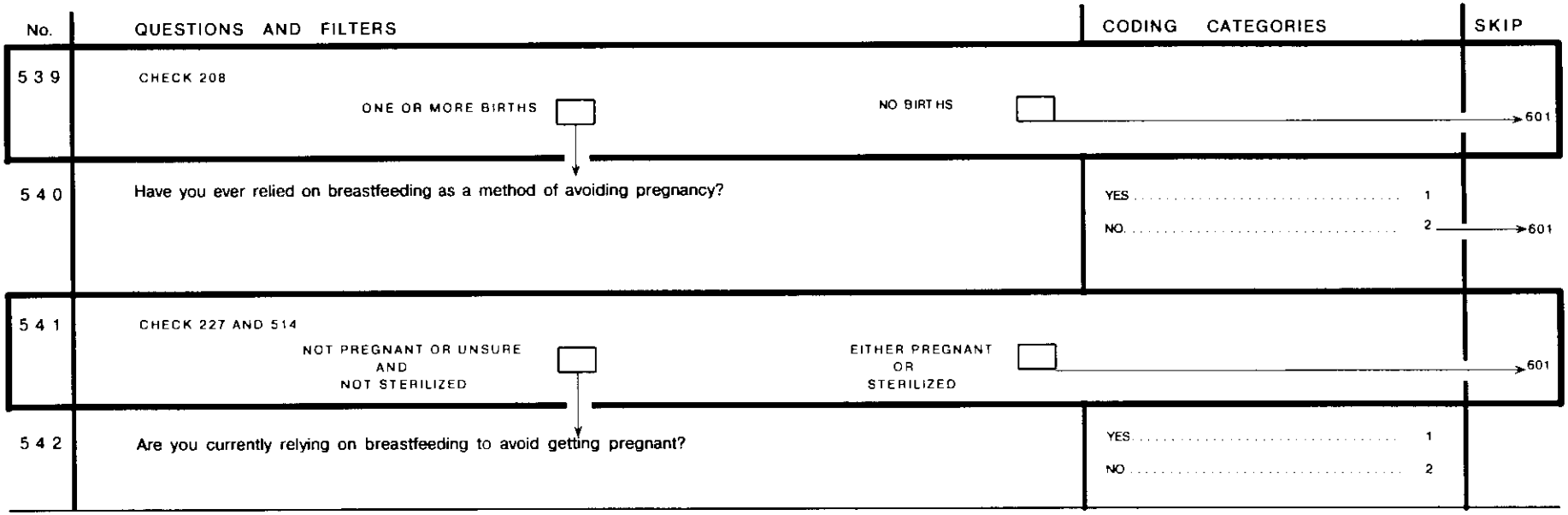
514 514A	Which method are you using? CIRCLE '07 FOR FEMALE STERILIZATION.	PILLS . . . . . 01 IUD . . . . . 02 INJECTIONS . . . . . 03 → 526 DIAPHRAGM/FOAM/JELLY . . . . . 05 CONDOM . . . . . 06 FEMALE STERILIZATION . . . . . 07 → 518 CALENDAR METHOD . . . . . 09 → 523 WITHDRAWAL . . . . . 10 → 526 OTHER _____ 96 (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 . . . . . ☐☐☐☐ → 526 FREE . . . . . 9996 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 . . . . . 11 POLYCLINIC . . . . . 12 FAMILY PLANNING CLINIC . . . . . 13 MOBILE CLINIC . . . . . 14 OTHER PUBLIC HEALTH FACILITY _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC . . . . . 21 PRIVATE DOCTOR . . . . . 23 MOBILE CLINIC . . . . . 24 OTHER PRIVATE HEALTH FACILITY _____ 26 (SPECIFY) OTHER _____ 96 (SPECIFY) DON'T KNOW 98

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
519	Do you regret that you had the operation not to have any (more) children?	YES . . . . . 1 NO . . . . . 2 → 521	
520	Why do you regret the operation?	RESPONDENT WANTS ANOTHER CHILD . . . . 01 PARTNER WANTS ANOTHER CHILD . . . . . 02 SIDE EFFECTS . . . . . 03 CHILD DIED . . . . . 04 OTHER _____ 96 (SPECIFY)	
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)	
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 MOBILE CLINIC ..... 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	

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 MOBILE CLINIC . . . 14 COMMUNITY HEALTH WORKER . . . 15 OTHER PUBLIC HEALTH FACILITY _____ (SPECIFY) 16 PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC . . . 21 PRIVATE PHARMACY . . . 22 PRIVATE DOCTOR . . . 23 MOBILE CLINIC . . . 24 PRIVATE HEALTH WORKER . . . 25 OTHER PRIVATE HEALTH FACILITY _____ (SPECIFY) 26 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 → 601 DON'T KNOW . . . 8 → 601
538	Do you think that a woman's chance of becoming pregnant is increased or decreased by breastfeeding?	INCREASED . . . 1 DECREASED . . . 2 DEPENDS . . . 3 DON'T KNOW . . . 8


No.
QUESTIONS AND FILTERS
CODING CATEGORIES
SKIP
539
CHECK 208
ONE OR MORE BIRTHS
NO BIRTHS
601
540
Have you ever relied on breastfeeding as a method of avoiding pregnancy?
YES 1
NO 2
601
541
CHECK 227 AND 514
NOT PREGNANT OR UNSURE AND NOT STERILIZED
EITHER PREGNANT OR STERILIZED
601
542
Are you currently relying on breastfeeding to avoid getting pregnant?
YES 1
NO 2

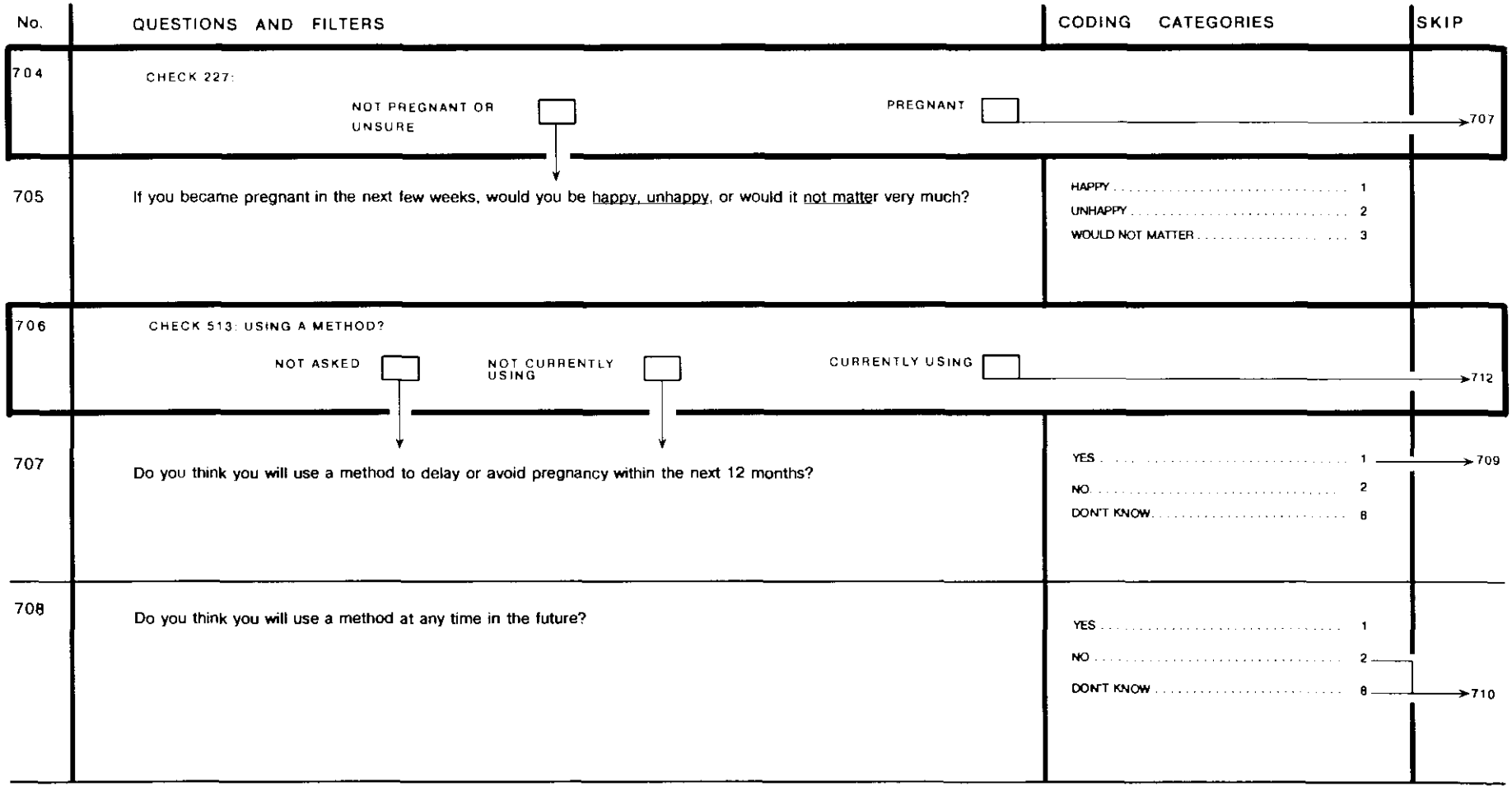
Section 6. MARRIAGE

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	

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
612	CHECK 611 MARRIED/LIVED WITH A MAN ONLY ONCE ☐ In what month and year did you start living with your husband/partner? MARRIED/LIVED WITH A MAN MORE THAN ONCE ☐ Now we will talk about your first husband/partner. In what month and year did you start living with him?	MONTH . . . . . ☐☐ DON'T KNOW MONTH . . . . . 98 YEAR . . . . . ☐☐ DON'T KNOW YEAR 98	→ 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	→ 712
		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	

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 ☐ Now I have some questions about the future. Would you like to have (a/another) child or would you prefer not to have any (more) children? PREGNANT ☐ Now I have some questions about the future. After the child you are expecting, would like to have another child or would you prefer not to have more children?	HAVE (A/ANOTHER) CHILD . . . . . 1 NO MORE/NONE . . . . . 2 SAYS SHE CAN'T GET PREGNANT . . . . . 3 → 706 UNDECIDED/DON'T KNOW . . . . . 8 → 704	
703	CHECK 227 NOT PREGNANT OR UNSURE ☐ How long would you like to wait from now before the birth of (a/another) child? PREGNANT ☐ 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	


No.
QUESTIONS AND FILTERS
CODING CATEGORIES
SKIP
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
712
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

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 → 712
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 OTHER _____ 96 (SPECIFY) DON'T KNOW . . . . . 98 → 712

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
711	Would you ever use a method if you were married?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
712	CHECK 222 HAS LIVING CHILDREN ☐ ↓ If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be? NO LIVING CHILDREN ☐ ↓ If you could choose exactly the number of children to have in your life, how many would that be? PROBE FOR A NUMERIC RESPONSE.	NUMBER . . . . . ☐☐ OTHER _____ 96 (SPECIFY)	→ 714
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)	

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 → 721	
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)	

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	

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 ☐ NEVER MARRIED AND NEVER IN UNION ☐		→ 803 → 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	

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 NO . . . 2 MATERNITY LEAVE . . . 3	→812 →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 NO . . . 2	→812
811	Have you done any work in the last 12 months?	YES . . . 1 NO . . . 2	→826
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 → 818 SEASONALLY . . . . . 2 ONCE IN A WHILE (EPISODICALLY) . . . . . 3 → 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 . . . . . ☐☐	

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 1992 ☐ NO LIVING CHILDREN BORN SINCE JANUARY 1992 ☐ → 1001		

IN 905 RECORD THE LINE NUMBER FOR EACH CHILD BORN SINCE JANUARY 1992 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 1992 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 . . . . . ☐☐

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: _____ ☐☐

Қазақстан Республикасының
Ұлттық Ғылым Академиясы
ТАҒАМТАНУ ИНСТИТУТЫ

Национальная Академия наук
Республики Казахстан
ИНСТИТУТ ПИТАНИЯ

Центр Сотрудничающий со Всемирной Организацией Здравоохранения

№ _____ "__" _____199___

Dear Respondent:

The Institute of Nutrition is conducting Demographic and Health Survey in Kazakhstan. As part of this program we study the prevalence of anemia among the women and their children. We ask you to participate in this program, which will assist the Ministry of Health of Kazakhstan 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 results from poor nutrition and can be especially damaging to the health of pregnant and breastfeeding women.

Today, it is possible to rapidly (within a few minutes) diagnose this disease. A low level of hemoglobin (less than 11 g/dl) can be determined by a Hemocue machine 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. The procedure will be done by sterile instruments. The blood will be analysed using the new sophisticated American equipment, Hemocue. The result of analysis will be available to you right after the blood is taken and assessed by Hemocue. We will also 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 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 Middle name

agree to donate a drop of blood for the purpose of anemia diagnosis. I also allow a drop of blood to be taken from my child(children) for the purposes of anemia diagnosis.

Signature _____

Date _____ _____

480008 Республика Казахстан, г. Алматы, ул. Ключкова 66. Тел. (3272)429-203, факс. (3272)420-720
Расчетный счет 000608602 в Алматинском облуправлении Национального банка (Казахстан), код 190501109, МФО 61803

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 1992 ☐ NO LIVING CHILDREN BORN SINCE JANUARY 1992 ☐ → 1009		

IN 1004 RECORD THE LINE NUMBER FOR EACH CHILD BORN SINCE JANUARY 1992 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 1992 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)	☐☐.☐	☐☐.☐

1007	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)
1008	NAME OF MEASURER _____ ☐☐	NAME OF ASSISTANT _____ ☐☐	
1009	CHECK 1001 AND 1006 NO VALUES BELOW 7 G/DL ☐	ONE OR MORE VALUE BELOW 7 G/DL ☐ → CONSENT FORM NO 2	

RECORD THE RESULTS OF HEMOGLOBIN MEASUREMENT, TEAR OFF HERE AND PRESENT THIS PORTION TO THE RESPONDENT

INSTITUTE OF NUTRITION

RESULTS OF HEMOGLOBIN MEASUREMENT IN THE BLOOD

Date _____ _____ 1995

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 (3272)429-111, or write to: Department of the National Nutrition Policy, Institute of Nutrition, 66 Klotchkov St., Almaty, Kazakstan, 480008

Қазақстан Республикасының
Ұлттық Ғылым Академиясы
ТАҒАМТАНУ ИНСТИТУТЫ

Национальная Академия наук
Республики Казахстан
ИНСТИТУТ ПИТАНИЯ

Центр Сотрудничающий со Всемирной Организацией Здравоохранения

№ _____ " " _____ 199___

Dear Respondent:

We detected the low level of hemoglobin in your (your child's) blood. This indicates that you (your child) have developed severe anemia, which is serious health problem. We would like to inform about this the doctor at health care facility in your area. That would help you to meet 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, Middle Name

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 "_____"_____1995

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COMMENTS

Comments about Respondent: _____

_____

_____

Comments on Specific Questions: _____

_____

Any Other Comments: _____

_____

_____

SUPERVISOR'S OBSERVATIONS

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Name of Supervisor: _____ Date _____

EDITOR'S OBSERVATIONS

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Name of Editor _____ Date _____