CHAPTER 2

METHODOLOGY

The Demographic and Health Surveys (DHS) and Reproductive Health Surveys (RHS) continue a tradition of international family planning/maternal and child health survey programs that extends back three decades. The World Fertility Survey (WFS) project, conducted from 1972 to 1984, was the first worldwide survey program to collect comparable national population-based data on fertility and family planning. Between 1977 and 1985, the Contraceptive Prevalence Survey project (CPS) also collected and reported data in developing countries on fertility and family planning as well as programmatic issues. No countries of the Caucasus or Central Asia were included in these survey programs, and only the Czech Republic, Hungary, and Romania participated in the WFS.

In 1975 the Division of Reproductive Health (DRH) of the U.S. Centers for Disease Control and Prevention (CDC) began providing technical assistance to national population-based family planning surveys, which have evolved into the RHS (Morris, 2000). In 1984 the DHS program was established, combining features of the WFS and CPS and adding coverage of maternal and child health. In 1997 the DHS was renamed DHS+ to reflect more intensive coverage of health issues.

Since the first DHS in 1985, 67 countries have been surveyed in all regions of the developing world, with repeat surveys in 44 countries. RHS have been conducted in 19 countries since 1991, with repeat surveys in 8 countries. The first RHS in the Eastern European region were conducted in the Czech Republic and Romania in 1993, and the first DHS in the region was conducted in Kazakhstan in 1995. Both survey programs are funded principally by the U.S. Agency for International Development (USAID) with support in several countries from the United Nations Population Fund (UNFPA) and UNICEF.

Today, DHS surveys provide comparable information on a range of reproductive health topics, including contraceptive use, maternal and child health, child survival, and HIV/AIDS and other sexually-transmitted infections (STIs). In addition, the DHS program assists countries with improving data collection efforts, such as health information systems. The RHS are tailored to meet the information needs specific to individual countries. In addition to the standard questionnaire similar to the DHS questionnaire, the RHS program enables countries to add special-purpose modules that focus on specific issues, including young adults, intimate partner violence, STIs, school attendance, and special populations such as internally displaced and refugee women.

The CDC also conducts the Young Adult Reproductive Health Surveys (YARHS), which survey males and females 15-24 years of age to obtain more detailed information on reproductive behavior, including behavioral risks, and related knowledge and attitudes within this population.

Survey findings from the DHS- and CDC-supported surveys in the 1980s appear in the Johns Hopkins University **Population Reports**, *The Reproductive Revolution: New Survey Findings,* M-11, December 1992, and a summary of survey findings in the 1990s has recently been published (Zlidar, V. M. et al., 2003).

This report presents an overview of the 17 surveys conducted from 1993 to 2001 in 12 countries of Eastern Europe, the Caucasus, and the Central Asian republics (See the appendix table listing all surveys and implementing organization(s) by country). Much of the report will focus on the most recent of the surveys conducted in each country:

- ♦ *Eastern Europe:*
    - Czech Republic (CZ), 1993
    - Moldova (MD), 1997
    - Romania (RO), 1999
    - Russia (RU), 1999
    - Ukraine (UA), 1999
- ♦ *Caucasus Region:*
    - Armenia (AR), 2000
    - Azerbaijan (AZ) 2001
    - Georgia (GE), 1999
- ♦ *Central Asian Republics*
    - Kazakhstan (KZ), 1999
    - Kyrgyz Republic (KG), 1997
    - Turkmenistan (TM), 2000
    - Uzbekistan (UZ), 1996

2.1 Sampling Design

Both the DHS and the RHS are designed to collect information from a representative sample of women of reproductive age, regardless of marital status. These probability samples are based on in-person, face-to-face interviews with the respondents at their homes. In some countries, an additional sample of males has been included. All surveys are designed to obtain independent estimates for urban and rural areas, and sometimes are divided into three strata: the Capital city metropolitan area, other urban areas, and rural areas. Thus, over-sampling is sometimes needed for the rural domain.

The DHS and RHS both have a two-stage sample design in which the first stage (primary sampling units or PSUs), consisting of census tracts or area units (sample clusters), are selected from a sampling frame, generally a recent census, from the National Statistical Center. In some cases, updated sampling frames used for labor force surveys or from

electoral districts are utilized if the census is not recent. A household listing operation is typically conducted in the selected PSUs. In the DHS, the second stage uses systematic random sampling to select households in which eligible women (or men) are identified for interview. In the RHS, a contiguous cluster of households is selected with a random start.

In the RHS, a third stage is utilized in which one woman is selected for interview at random in households with more than one eligible woman. Because only one woman is selected from a household, all results are weighted to compensate for the fact that some households included more than one female (or male) of reproductive age. The principal reason for the selection of one woman per household is because of the young adult module, which explores sexual behavior of women 15-24 years of age. Because most households with more than one eligible woman include a mother and daughter, and experience shows that the mother is more likely to be at home at the first visit to the household, this selection is made to avoid discussions between the mother and daughter that may influence the daughter's participation in the survey and her responses.

Another difference in design is the handling of male samples (when included). The DHS generally includes a sub-sample of males in the households selected in the female sample. The RHS uses the same PSU selected for the female sample for the male sample, but selects a sample of households that were not included in the female sample.

The reader is referred to the survey reports, which are listed at the end of this report in the references, for more detail on each country's sample design.

2.2 Characteristics of Eligible Women

An overview of selected characteristics of the women interviewed in the surveys is essential background for many of the findings presented in this report, and can provide an approximate indication of the representativeness of each survey. Again, the reader is directed to the final report for each survey for comparisons to census and other survey data and analyses of the quality of the data, including possible non-response differentials that required post-stratification weighting. It should be emphasized that all results presented in these tables and all the following tables in this report are weighted to adjust for sampling design and non-response differentials, if necessary. However, the unweighted number of observations, used for variance estimation, is also shown.

Another note concerning data presented in this report relates to *percent distributions*; although all percent distributions are shown to add to 100 percent, they may actually add to 99 percent or 101 percent due to rounding.

Response rates for eligible women are shown in Table 2.2.1 for each country by residence and by region. As mentioned previously, three of the 12 countries had sampling designs that separated urban areas into the metropolitan area of the capital city and other urban areas. All others present response rates for the national level and by urban and rural areas, except for Russia, which was not a national survey as data were collected in only three primarily urban areas.

In Tables 2.2.1 and 2.2.2, response rates and respondent characteristics are presented for the most recent survey for the three countries

with more than one survey (Romania, Russia and Kazakhstan).

Response rates are generally excellent in this region of the world, ranging from 85% in Ukraine to 99% in Georgia and Kazakhstan; Ukraine is the only country with a response rate of less than 90%. Response rates are best in the Central Asian republics; and only Azerbaijan in the Caucasus region is less than 96%. As many as four visits are made to each household with eligible respondents who were not at home during the first visit to the household. Non-response essentially represents women who could not be found after multiple visits to the household as refusal rates are very low. Less than three percent of eligible respondents refused to give an interview in 9 of the 12 countries. Only in the Czech Republic, Russia, and Ukraine did refusals reach 5 or 6%.

Completed interviews indicate sample sizes that range from 3,848 in the Kyrgyz Republic to 7,919 in Turkmenistan. Surveys conducted prior to 1998 tend to have smaller sample sizes, from 3,848 to 5,412, whereas all surveys since 1998, with the exception of Kazakhstan, have samples greater than 6,000 women.

The percentage distribution of selected characteristics of respondents-including residence, age group, marital status, education and number of living children (children ever born in the case of the Central Asian republics and Armenia)-are presented in Table 2.2.2 for each of the three sub-regions. Two of the respondent characteristics in this table need clarification.

For the marital status variable, women are classified according to their formal (legal) status at the time of interview into several

Region and Country	Total	Number of Cases	Residence			
			Capital City	Other Urban	Urban	Rural
Eastern Europe						
Czech Rep., 1993	92	4,870	†	†	93	91
Moldova, 1997	98	5,543	97‡	97	†	99
Romania, 1999	90	7,645	86	91	†	90
Russia, 1999	91	6,582	†	†	91	†
Ukraine, 1999	85	8,367	†	†	84	89
Caucasus						
Armenia, 2000	96	6,685	†	†	96	97
Azerbaijan, 2001	93	8,246	86	94	†	96
Georgia, 1999	99	7,896	†	†	99	99
Central Asia						
Kazakhstan, 1999	97	3,954	†	†	98	97
Kyrgyz Rep., 1997	99	4,906	†	†	98	98
Turkmenistan, 2000	96	8,250	†	†	96	96
Uzbekistan, 1996	97	4,544	†	†	97	98

Table 2.2.1
Individual Response Rates by Residence*
(Among Eligible Respondents)
Eastern Europe and Eurasia: A Comparative Report

* Three of the 12 countries had sampling designs that separated urban areas into the metropolitan area of the capital city and other urban areas. All others present response rates for the national level and by urban and rural areas, except for Russia, which was not a national survey as data were collected in only three primarily urban areas.
† Not applicable.
‡ Four largest municipalities, including Chisinau, the capital city.

Table 2.2.2
Percent Distribution of Eligible Women with Complete Interviews
by Selected Background Characteristics
Eastern Europe and Eurasia: A Comparative Report

Country	Eastern Europe					Caucasus			Central Asia			
	Czech Rep.	Moldova	Romania	Russia	Ukraine	Armenia	Azerbaijan	Georgia	Kazakhstan	Kyrgyz Rep.	Turkmenistan	Uzbekistan
	1993	1997	1999	1999*	1999	2000	2001	1999	1999	1997	2000	1996
Residence												
Urban	66	52	63	*	73	61	55	56	56	34	47	38
Rural	34	48	37	*	27	39	45	44	44	67	53	62
Age												
15–19	20	19	17	12	17	18	22	20	17	19	20	22
20–24	16	17	19	17	16	16	17	17	14	17	20	18
25–29	15	15	18	17	17	12	13	16	14	14	16	16
30–34	14	16	16	16	17	12	17	16	15	16	13	14
35–39	18	19	14	20	17	15	17	18	16	15	12	13
40–44	18	14	17	18	17	15	13	14	14	11	11	10
45–49	†	†	†	†	†	13	†	†	11	8	8	7
Marital Status												
Currently Married	67	69	65	63	66	64	59	61	63	70	62	70
Previously Married	8	8	7	16	12	7	5	6	12	9	6	5
Never Married	26	23	29	21	23	29	36	33	25	22	32	25
No. of Living Children‡												
0	30	31	39	30	29	33	43	40	29	27	37	31
1	19	25	26	36	35	10	10	15	19	14	11	12
2	37	31	25	29	30	27	23	31	25	18	15	17
3	11	10	6	3	4	20	16	12	14	14	13	14
4+	3	4	5	1	1	10	8	3	13	27	25	27
Education Level												
Secondary Incomplete	59	24	53	12	11	13	25	17	8	11	26	13
Secondary Complete	34	38	30	22	28	32	48	33	32	42	47	51
Technicum	¶	23	¶	42	41	36	15	24	40	30	20	26
Postsecondary	8	16	17	24	20	19	12	26	20	17	7	11
Total	100	100	100	100	100	100	100	100	100	100	100	100
Number of Women	4,497	5,412	6,888	6,004	7,128	6,430	7,668	7,798	4,800	3,848	7,919	4,415

* Data for Russia pertain to three primarily urban areas as described in text.
† Women aged 45–49 were not interviewed in RHS surveys.
‡ Number of children ever born in Armenia and Central Asia.
¶ Technicum, specific to former Soviet Union countries, does not exist in the Czech Republic or Romania.

categories: (1) legally married, (2) cohabitating or living in a consensual (unregistered) marital union, (3) widowed, (4) separated, (5) legally separated or (6) never married. The term currently married, used interchangeably with "women in union," refers to women in legal and consensual marital unions. The term "previously married" encompasses two categories: a) women who have been in legal unions and are currently widowed, divorced or separated and b) women who have been in consensual marital unions and are currently widowed or separated. The never married category refers to women who have never been in either a legal or consensual marital relationship. In the tables presented in this report the currently married category will always include women in both formal and consensual marital unions.

For the educational level variable, four categories of educational attainment were chosen for the countries of the former Soviet Union: (1) secondary incomplete, which includes no education, primary school or some secondary school attendance, (2) secondary complete, which includes 10 or 11 years of schooling depending on the country, (3) technicum (called secondary special in some countries), and (4) postsecondary. The technicum level is essentially mid-level technical or vocational training for 4 to 5 years for students leaving secondary school after grade 9 or 10 or for 2 years after completing secondary school. (see glossary). Post-secondary refers to university level following completion of secondary school. In the Czech Republic and Romania, there is no technicum level and secondary complete includes 12 years of schooling.

The three regions present different profiles. The five countries surveyed in Eastern Europe have a majority urban population, ranging from 52% to 73% urban, and included women 15-44 years of age; the Russia three-oblast survey was primarily an urban sample. From 29% to 36%, around one-third, of the women surveyed in Eastern Europe were young adults 15-24 years of age, reflecting the low fertility rates seen in these countries in the recent past, in contrast to developing countries where 40% or more of reproductive age women are young adults. From 21% to 29% of women have never been married or lived in a consensual union and about two-thirds (63%-69%) are currently married or live in a consensual union. Women in these countries tend to be well educated as evidenced by the relatively low proportion of women who did not have any secondary education (data not shown). Most of the respondents who had not yet completed secondary education were young women still in school. Reflecting the proportion of women who have never been married, approximately 30% of the women in four of the five countries report that they have no living children; in the Russian areas surveyed, it is 39%. Most women report having one or two living children, from 46% in the Czech Republic to 65% in Ukraine.

The three countries surveyed in the Caucasus region (Armenia, Azerbaijan, and Georgia) have a slightly greater urban than rural population, ranging from 55% to 61% urban. Armenia includes women from 15-49 years of age. Excluding the women 45-49 years of age in Armenia, from 37% to 41% are young adults, higher than in Eastern Europe. Also, a higher proportion of women have never been married, ranging from 29% in Armenia to 36% in Azerbaijan, reflecting, in part, the younger age distribution. Most women have completed primary school and the majority have completed secondary school. The profile of number of living children is similar to that seen in Eastern Europe, but a greater proportion of women report having three or more children.

Three of the four Central Asian republics (Kyrgyz Republic, Turkmenistan, and Uzbekistan) are predominantly rural; Kazakhstan is slightly more urban than rural. These countries have younger age distributions, with 30% to 40% of women of reproductive age from 15-49 in the young adult group. If we restricted reproductive age to 15-44, young adults would represent from 34% to 44% of all women. There is about an 8 percentage point range in women currently married, from 62% in Turkmenistan to 70% in Uzbekistan. In three of the four countries, a much higher proportion of women report having three or more children than in the Eastern European or Caucasus regions. In three of the countries, from 36% to 38% have either a technicum (secondary special) or post-secondary education. In Kazakhstan, 60% of women report these levels of education, reflecting, in part, a higher proportion of Russian ethnic population. The influence of ethnicity and religion is different in each country and readers are referred to the individual country reports for more detailed analysis of these two background characteristics, as the ethnic and religious compositions are different in each country and are beyond the scope of this report.