

Moldova - Demographic and Health Survey 2005

**National Scientific and Applied Center for Preventive Medicine (NCPM) - Ministry of
Health and Social Protection**

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Sampling

Sampling Procedure

The 2005 Moldova Demographic and Health Survey is based on a representative probability sample of over 11,000 households. This sample was designed in such a manner as to allow separate urban and rural estimates for key population and health indicators, e.g., fertility, contraceptive prevalence, and infant mortality for children under five. Transnistria, the semiautonomous region in the eastern part of the country accounting for approximately 15 percent of Moldova's population, is not included in the sample.

The 2005 MDHS utilized a two-stage sample design. The first stage involved selecting a sample of cluster sectors from an updated master sampling frame constructed from the 2004 Moldova Population and Housing Census. A total of 400 clusters in Moldova were selected from the master sampling frame. Clusters for urban and rural domains (233 urban and 167 rural) were selected using systematic sampling with probabilities proportional to their size. The distribution of clusters between urban and rural domains is not proportional to the 2004 census distribution, and consequently neither is the final household distribution. The 2005 MDHS is, therefore, not a self-weighted household sample. A final weighting adjustment procedure was carried out to provide estimates at the national level.

A complete household listing operation was carried out from early April to late May 2005 in all of the selected clusters in order to provide a sampling frame for the second stage selection of households. The second stage selection involved the systematic selection of households from a complete listing of all households in each of the 400 clusters. The sample "take" in both urban and rural clusters was 30 households.

SAMPLE FRAME

Administratively, Moldova (West) is divided into three major geographical regions including North, Center, South regions and Chisinau municipality. For the purposes of conducting the 2004 Population and Housing Census, each geographical region was further subdivided into administrative areas called census sectors (CS). Each CS is classified as urban or rural. The population size of each CS, made available from the 2004 census, coupled with detailed cartographic information for each CS, comprise the master sample frame for the 2005 MDHS survey.

CHARACTERISTICS OF THE SAMPLE

The primary sampling unit (PSU), referred to as a "cluster" in the 2005 MDHS, is defined based on the list of CSs as demarcated in the 2004 census. The CS was a unit originally constructed to ensure a convenient census workload, and it also serves as a practical primary sampling unit for the 2005 MDHS.

The 2005 MDHS utilized a two-stage sample design. The primary sampling stage involved selecting a sample of 400 clusters from an updated master sampling frame from the 2004 census. The pre-classified urban and rural CSs were used to define the explicit strata for the purpose of cluster selection i.e., for Moldova (West) as a whole, a specified number of urban and rural CSs was selected independently. The second stage of sampling involved the systematic selection of households from an updated listing of all households in each of the selected clusters. A sample take of 30 households in each cluster was selected prior to data collection.

SAMPLE ALLOCATION AND SAMPLE SIZE

The target household sample size needed for the 2005 MDHS survey was estimated to be 12,000 selected households in the whole of Moldova (West). This number of households was expected to yield an adequate number of women of eligible age (approximately 8,100) to compute survey indicators, and an adequate number of children under five years (approximately 1,800) whose information would be collected from the women (or, in some cases, the child's caretaker). The estimated sample sizes are based on the levels of response resulting from the 2000 Moldova MICS, where both urban and rural households provided, on average, 0.7 women of eligible age. The average number of children under age five was approximately 0.1-0.2 per household.

The final recommended sample is one adjusted to collect information on an approximately equal number of children in each domain (see Table A.3 in the survey Final Report). A total of 400 clusters in Moldova (West) were selected from the sampling frame, including 233 urban and 167 rural clusters selected using systematic sampling with probabilities proportional to their size. Table A.3 shows the final distribution of selected households for the 2005 MDHS.

Response Rate

A total of 12,206 households were selected for the sample, of which 11,649 were occupied at the time of fieldwork. The main reason for the difference is that some of the dwelling units that were occupied during the household listing operation were either vacant or the household was away for an extended period at the time of interviewing. Of the occupied households, 95 percent were successfully interviewed.

In the households interviewed in the survey, a total of 7,826 eligible women age 15-49 were identified; interviews were completed with 7,440 of these women, yielding a response rate of 95 percent. In a subsample of one-third of households in the MDHS sample, a total of 2,897 eligible men were identified and interviews were completed with 2,508 of these men, yielding a male response rate of 87 percent. As is typically found in other surveys, the response rates are lower for the urban than for the rural sample, and lower among men than women.

The principal reason for nonresponse among both eligible women and men was the failure to find individuals at home despite repeated visits to the household.

Questionnaires

Overview

Three questionnaires were used for the 2005 MDHS: the Household Questionnaire, the Women's Questionnaire and the Men's Questionnaire. The contents of these questionnaires were based on model questionnaires developed by the MEASURE DHS program. Consultations with partners were held in Chisinau to obtain input from various national and international experts on a broad array of issues. Based on these consultations, the DHS model questionnaires were modified to reflect issues relevant in Moldova concerning population, women and children's health, family planning, and other health issues. After approval of the final content by the steering committee, these questionnaires were translated from English into Romanian and Russian.

a) The Household Questionnaire was used to list all the usual members and visitors in the selected households and to identify women and men who were eligible for the individual interview. Basic information was collected on the characteristics of each person listed, including their age, sex, education, and relationship to the head of the household. In addition, a separate listing and basic information on former household members who had emigrated abroad was collected. The Household Questionnaire was also designed to collect information on characteristics of the household's dwelling unit, such as the source of water, type of toilet facilities, materials used for the floor and roof of the house, ownership of various durable goods, etc. Finally, height and weight measurements, and the results of hemoglobin measurements for consenting women age 15-49 years and children age 6-59 months were recorded in the Household Questionnaire.

b) The Women's Questionnaire was used to collect information from all women age 15-49. These women were asked questions on the following topics:

- background characteristics (education, residential history, media exposure, etc.);
- reproductive history;
- knowledge and use of family planning methods;
- fertility preferences;
- antenatal and delivery care;
- breastfeeding and infant feeding practices;
- vaccinations and childhood illnesses;
- marriage and sexual activity;
- woman's work and husband's background characteristics;
- infant and child feeding practices;
- childhood mortality; and
- awareness and behavior about AIDS and other sexually transmitted infections (STIs).

The Women's Questionnaire had a number of important additions to the DHS model questionnaire. First, a series of questions were incorporated to obtain information on women's experience of domestic violence. These questions were administered to one woman per household. In households with two or more eligible women, special procedures were followed in order to ensure that there was random selection of the women to be interviewed with these questions. Another addition to the Women's Questionnaire was a vaccination module for each child under the age of five years to be completed at the local health clinic. According to child health experts, immunization information is more frequently kept at the health clinic than on a health card in the mother's possession. The purpose of this module was, therefore, to collect information on immunizations from the local health clinic in addition to that collected during the woman's interview. The vaccination module provides better quality immunization indicators because information gathered during the interview is augmented with information from the local health clinic.

Closely related to the Women's Questionnaire is the caretaker module. This separate module contains the same set of child health questions as those in the Women's Questionnaire regarding immunizations, childhood illnesses such as fever and diarrhea, and nutrition. The purpose of this module is to gather information on children under age 5 years whose mother does not live in the selected household or is not available to be interviewed. This is important because of the large number of young women emigrating and leaving behind a significant number of children to be cared for by another caretaker.

c) The Men's Questionnaire was administered to all men age 15-59 living in every third household in the MDHS sample. The Men's Questionnaire collected much of the same information found in the Women's Questionnaire, but was shorter because it did not contain questions on reproductive history, maternal and child health, nutrition, and domestic violence.

All aspects of the MDHS data collection were pretested in April 2005. Twenty-six people with medical backgrounds and other specialties were trained for two weeks and then dispatched to conduct interviews in Romanian and Russian, carry out hemoglobin testing, and take height and weight measurements. Over 200 households in urban and rural areas were interviewed in the pretest. The lessons learned from the pretest were used to finalize the survey instruments and logistical

arrangements. The major changes as a result of the pretest were incorporation of the caretaker module described above and soliciting the assistance of local medical personnel in each cluster to introduce field personnel to selected households. The latter served to improve household response rates, especially in urban areas.

Data Collection

Data Collection Dates

Start	End	Cycle
2005-06	2005-08	N/A

Data Collection Mode

Face-to-face

DATA COLLECTION NOTES

Training of fieldwork staff began on May 16, 2005 in Chisinau and lasted three weeks. A total of 96 training participants were trained as field staff supervisors, editors, and interviewers. In addition, 12 data entry operators and two office editors attended the training. All field staff were also trained as technicians to conduct hemoglobin testing. Most of the participants had a medical background and several had prior experience as interviewers for the UNICEF Multiple Indicator Survey (MICS 2000). Interviewer training was conducted mostly in Romanian by senior staff from NCPM with technical input from ORC Macro. In addition, resource persons from other agencies made presentations on Moldova's program for family planning, maternal and child health, HIV/AIDS, and gender issues including domestic violence. All participants were trained on interviewing techniques and the contents of the MDHS questionnaires. The training was conducted following the standard DHS training procedures, including class presentations, mock interviews, and written tests. All of the participants were trained on how to complete the Household Questionnaire, the Women's Questionnaire, and the Men's Questionnaire. In addition to in-class training, participants practiced taking anthropometric measures and conducting anemia testing on consenting women and children at local health clinics. They also spent several days in practice field sites interviewing in both languages and carrying out all fieldwork activities. While both female and male interviewers interviewed respondents for the Household Questionnaire, only female interviewers interviewed respondents eligible for the Women's Questionnaire and only male interviewers for the Men's Questionnaire. Participants selected as field supervisors and editors were given an additional two days of training on how to supervise fieldwork and edit questionnaires.

Fifteen teams were organized for fieldwork. Each team was made up of a field supervisor, an editor, three female interviewers, and one male interviewer. The field staff was selected on the basis of assessments of in-class participation, field practice, fluency in languages, and capacity to conduct interviews as well as anemia testing. The most experienced participants, namely those who had participated in the pretest and those who did very well in the main survey training, were selected to be supervisors and editors.

Senior staff from the NCPM coordinated and supervised all aspects of fieldwork activities. ORC Macro followed fieldwork progress by receiving approximately every two weeks a standard set of quality control tables generated from the most recent accumulation of data. Data collection took place for just over two months, from June 13 to August 18, 2005. On average, each team completed one cluster over two full days, taking advantage of early mornings and late evenings to find respondents at home.

Data Collectors

Name	Abbreviation	Affiliation
National Scientific and Applied Center for Preventive Medicine	NCPM	MOH

SUPERVISION

The most experienced participants, namely those who had participated in the pretest and those who did very well in the main survey training, were selected to be supervisors and editors. Senior staff from the NCPM coordinated and supervised all aspects of fieldwork activities. ORC Macro followed fieldwork progress by receiving approximately every two weeks a standard set of quality control tables generated from the most recent accumulation of data.

Data Processing

Data Editing

The processing of the MDHS results began shortly after the fieldwork commenced. Completed questionnaires were returned weekly from the field to the NCPM headquarters in Chisinau, where they were entered and edited by data processing personnel who were specially trained for this task. Data were entered using CPro, a program specially developed for use in DHS surveys. All data were entered twice (100 percent verification). The concurrent processing of the data with ongoing data collection was a distinct advantage for data quality since NCPM had the opportunity to advise field teams of problems detected during the data entry. The data entry and editing phase of the survey was completed in late August 2005.

Data Appraisal

Estimates of Sampling Error

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 MDHS 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 MDHS is the ISSA Sampling Error Module (ISSAS). This module used the Taylor linearization method of variance estimation for survey estimates that are means or proportions. The Jackknife repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

The 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 MDHS, there were 400 non-empty clusters (PSUs). Hence, 400 replications were created.

In addition to the standard error, ISSAS computes the design effect (DEFT) for each estimate, which is defined as the ratio between the standard error using the given sample design and the standard error that would result if a simple random sample had been used. A DEFT value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a value greater than 1.0 indicates the increase in the sampling error due to the use of a more complex and less statistically efficient design. ISSAS also computes the relative error and confidence limits for the estimates.

Sampling errors for the MDHS are calculated for selected variables considered to be of primary interest. The results are presented in an appendix of the Final Report for the country as a whole, for urban and rural areas, for the three regions (North, Center, and South) and for Chisanau. For each variable, the type of statistic (mean, proportion, or rate) and the base population are given in Table B.1 of the Final Report. Tables B.2 to B.7 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 (R2SE), 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).

In general, the relative standard error for most estimates for the country as a whole is small, except for estimates of very small proportions. There are some differentials in the relative standard error for the estimates of subpopulations. For example, for the variable contraceptive use for currently married women age 15-49, the relative standard errors as a percent of the estimated mean for the whole country, for urban areas, and for rural areas are 1.1 percent, 1.5 percent, and 1.5 percent, respectively.

The confidence interval (e.g., as calculated for contraceptive use for currently married women age 15-49) can be interpreted as follows: the overall national sample proportion is .678 and its standard error is 0.007. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate, i.e. $.6782(0.007)$. There is a high probability (95 percent) that the true average proportion of contraceptive use for currently married women age 15 to 49 is between .663 and .692.

Other forms of Data Appraisal

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 MDHS to minimize this type of error, non-sampling errors are impossible to avoid and difficult to evaluate statistically.

Related Materials

Questionnaires

Moldova Demographic and Health Survey 2005 - Household Questionnaire

Title	Moldova Demographic and Health Survey 2005 - Household Questionnaire
Author(s)	National Scientific and Applied Center for Preventive Medicine (NCPM)
Date	2005-06-01
Country	Moldova
Language	English
Contributor(s)	ORC Macro
Description	The Household Questionnaire was used to list all the usual members and visitors in the selected households and to identify women and men who were eligible for the individual interview. Basic information was collected on the characteristics of each person listed, including their age, sex, education, and relationship to the head of the household. In addition, a separate listing and basic information on former household members who had emigrated abroad was collected. The Household Questionnaire was also designed to collect information on characteristics of the household's dwelling unit, such as the source of water, type of toilet facilities, materials used for the floor and roof of the house, ownership of various durable goods, etc. Finally, height and weight measurements, and the results of hemoglobin measurements for consenting women age 15-49 years and children age 6-59 months were recorded in the Household Questionnaire.
Filename	MDA_DHS_2005_Questionnaire_Household_En.pdf

Moldova Demographic and Health Survey 2005 - Woman's Questionnaire

Title	Moldova Demographic and Health Survey 2005 - Woman's Questionnaire
Author(s)	National Scientific and Applied Center for Preventive Medicine (NCPM)
Date	2005-06-01
Country	Moldova
Language	English
Contributor(s)	ORC Macro

The Women's Questionnaire was used to collect information from all women age 15-49. These women were asked questions on the following topics:

- background characteristics (education, residential history, media exposure, etc.);
- reproductive history;
- knowledge and use of family planning methods;
- fertility preferences;
- antenatal and delivery care;
- breastfeeding and infant feeding practices;
- vaccinations and childhood illnesses;
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- woman's work and husband's background characteristics;
- infant and child feeding practices;
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Filename MDA_DHS_2005_Questionnaire_Woman_En.pdf

Moldova Demographic and Health Survey 2005 - Man's Questionnaire

Title	Moldova Demographic and Health Survey 2005 - Man's Questionnaire
Author(s)	National Scientific and Applied Center for Preventive Medicine (NCPM)
Date	2005-06-01
Country	Moldova
Language	English
Contributor(s)	ORC Macro
Description	The Men's Questionnaire was administered to all men age 15-59 living in every third household in the MDHS sample. The Men's Questionnaire collected much of the same information found in the Women's Questionnaire, but was shorter because it did not contain questions on reproductive history, maternal and child health, nutrition, and domestic violence.
Filename	MDA_DHS_2005_Questionnaire_Man_En.pdf

Reports

Moldova Demographic and Health Survey 2005

Title	Moldova Demographic and Health Survey 2005
Author(s)	National Scientific and Applied Center for Preventive Medicine (NCPM)
Date	2005-06-01
Country	Moldova
Language	English
Contributor(s)	ORC Macro

Description	This report summarizes the findings of the 2005 Moldova Demographic and Health Survey (MDHS 2005), which was conducted by the National Scientific and Applied Center for Preventive Medicine (NCPM) of the Ministry of Health and Social Protection (MOHSP). Funding for the project was provided by the United States Agency for International Development (USAID) through the worldwide MEASURE DHS project (Contract No. GPO-C-00-0300002-00). Additional funding for the MDHS was provided by the United Nations Children's Fund (UNICEF) and the United Nations Population Fund (UNFPA). ORC Macro provided technical assistance. The opinions expressed herein are those of the authors and do not necessarily reflect the views of USAID or the Government of Moldova.
Filename	http://www.dhsprogram.com/pubs/pdf/FR178/FR178.pdf

Studiul Demografic si de Sanatate din Republica Moldova 2005

Title	Studiul Demografic si de Sanatate din Republica Moldova 2005
Author(s)	National Scientific and Applied Center for Preventive Medicine (NCPM)
Date	2005-06-01
Country	Moldova
Language	Moldavian
Contributor(s)	ORC Macro
Description	This report summarizes the findings of the 2005 Moldova Demographic and Health Survey (MDHS 2005), which was conducted by the National Scientific and Applied Center for Preventive Medicine (NCPM) of the Ministry of Health and Social Protection (MOHSP). Funding for the project was provided by the United States Agency for International Development (USAID) through the worldwide MEASURE DHS project (Contract No. GPO-C-00-0300002-00). Additional funding for the MDHS was provided by the United Nations Children's Fund (UNICEF) and the United Nations Population Fund (UNFPA). ORC Macro provided technical assistance. The opinions expressed herein are those of the authors and do not necessarily reflect the views of USAID or the Government of Moldova.
Filename	http://www.dhsprogram.com/pubs/pdf/FR178/FR178-Romanian.pdf