Moldova - Multiple Indicator Cluster Survey 2012

National Centre of Public Health - Ministry of Health, National Bureau of Statistics, United Nations Children's Fund

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Sampling

Sampling Procedure

A probability-based stratified sample was selected in two stages for the 2012 Moldova MICS. Considering that the 2004 Population Census cartographic materials were discarded, it became impossible to use them as a source of data for the sampling frame. Thus, the decision was to use the 2005 Moldova DHS sample for the first stage (PSU - Primary Sampling Unit) and for the second stage a probability-based sample of the households has been selected from each PSU.

Coverage
The reference population for the 2012 Moldova MICS depends on the particular indicators and is defined as follows (the size estimates are presented in Table SD.1):
1. Households;
2. Women aged 15-49 years;
3. Men aged 15-49 years;
4. Children under 5 years of age.
Geographically, the reference population is placed within the administrative borders of Moldova's territorial units which are located on the western side of the Nistru (Dniester River); the population living in the eastern side (left bank of the Dniester River and the Bender municipality -Transnistrian region) are not a part of 2012 Moldova MICS.

Sample representativeness
The 2012 Moldova MICS sample ensured representativeness at a national level (excluding Transnistrian region) and, like in the case of the 2005 Moldova DHS, at the level of residential areas - urban and rural. Although at the first sampling stage no stratification by zone was used, the results of the 2005 Moldova DHS survey indicate that the level of precision of the zone level estimates is acceptable.

Sample size
The sample size is determined, on the one hand, by the precision expected to be achieved for the key indicators, and on the other hand, by the availability of human and financial resources. The precision of a sample survey's results is liable to be affected by two types of errors: sampling and non-sampling errors. The level of the sampling errors is inversely proportional to the square root of the sample size, whereas the nonsampling errors are affected by an increase in the sample size. Consequently, the larger the sample is, the smaller the sampling errors, and the greater the non-sampling errors are. Therefore it is important that the size of the sample is balanced so as to ensure both an acceptable precision and a minimum level of non-sampling errors.

Taking into account the limitations due to the lack of maps of census sectors, which made it impossible to select a new sample of PSUs, it was decided to use the same sample of PSUs that was used for the 2005 Moldova DHS, which included 400 census sectors. The final sample size was 12,500 households, a figure obtained by selecting respective number of households from each of the 400 PSUs drawn at the first sampling stage.

PSU (cluster) size
The average number of households per PSU is around 90 in rural areas and approximately 120 in urban areas. These sizes were determined so as to ensure a reasonable workload for the enumerators involved in general 2004 Population Census conducted by the NBS. This also made the PSUs practical for updating the list of the households for the purpose of providing a sampling frame for the 2012 Moldova MICS second sampling stage in a timely and cost-effective manner.

Sampling frame
The sampling frame at the first sampling stage was built on the census sectors defined for the purposes of the 2004 Population Census carried out by the NBS. This included the list of all the census sectors, put into digital form, accompanied by variables for the identification of the sectors in the 2004 PC, information on areas of residence and geographical zones, and their measure of size expressed in number of persons.

Sample Selection Procedures
At the first stage of sampling, PSUs within each stratum were systematically drawn with probabilities proportional to their size (number of population based on the 2004 PC data). Prior to sampling, the census sectors in each stratum were sorted in geographical order from north to south, in order to provide an additional level of implicit stratification based on the geographic criterion. At the second sampling stage, a sample of 30 households was selected from each PSU. The selection was done in each PSU based on the lists of households registered following the update, using a simple systematic sampling procedure.

The sampling procedures are more fully described in "Moldova Multiple Indicator Cluster Survey 2012 - Final Report"

pp.143-147.

Response Rate

Of the 12,528 households selected for the sample, 11,657 were found to be occupied. Of these, 11,354 were successfully interviewed yielding a household response rate of 97 percent. In the interviewed households, 6,718 women aged 15-49 years were identified. Of these, 6,000 were successfully interviewed, yielding a response rate of 89 percent within interviewed households. In addition, 2007 eligible men aged 15-49 years were listed in the household questionnaire. This number is based on a sub-sample of men, with men being selected for interview in every third household. Questionnaires were completed for 1,545 of eligible men, which corresponds to a response rate of 77 percent. There were 1,940 children under age five listed in the household questionnaire; however, questionnaires were completed for 1,869, which corresponds to a response rate of 96 percent within interviewed households. Overall response rates of 87 percent, 75 percent, and 94 percent were reached for the women’s, men’s and under-5’s interviews respectively.

Questionnaires

Overview

The questionnaires for the Generic MICS were structured questionnaires based on the MICS4 model questionnaire with some modifications and additions. Household questionnaires were administered in each household, which collected various information on household members including sex, age and relationship. The household questionnaire includes household information panel, household listing form, education, water and sanitation, household characteristics, child discipline, hand washing and salt iodization.

In addition to a household questionnaire, questionnaires were administered in each household for women age 15-49, children under age five and men age 15-49. For children, the questionnaire was administered to the mother or primary caretaker of the child.

The women's questionnaire includes woman's information panel, woman's background, access to mass media and ICT, child mortality -birth history, desire for last birth, maternal and newborn health, post-natal health checks, illness symptoms, contraception, unmet need, attitudes toward domestic violence, marriage/union, sexual behavior, HIV/AIDS, tuberculosis, tobacco and alcohol use, life satisfaction and haemoglobin measurement.

The children's questionnaire includes child's age, birth registration, early childhood development, breastfeeding, care of illness, immunisation, anthropometry and haemoglobin measurement.

The men's questionnaire includes man's information panel, man's background, access to mass media and ICT, child mortality, attitudes toward domestic violence, marriage/union, sexual behavior, HIV/AIDS, tuberculosis, tobacco and alcohol use and life satisfaction.

MICS fourth round model questionnaires were customized based on the country’s needs so as to reflect relevant issues which are present in the Republic of Moldova in terms of children’s, women’s and men’s health, education, child protection, migration, HIV/AIDS, tuberculosis, anaemia, etc. Following content approval by the Steering Committee members, the questionnaires were translated from English and Russian into Romanian and were subsequently pre-tested (in Romanian and Russian).

Data Collection

Data Collection Dates

Start	End	Cycle
2012-04-17	2012-06-30	N/A

Data Collection Mode

Face-to-face [f2f]

DATA COLLECTION NOTES

Training for the fieldwork was conducted over 23 days (of which 16 were used for providing the theoretical framework and classroom practice, and 4 were used for field practice/piloting), between March 21 to April 12, 2012. The training included lectures on interviewing techniques and the contents of the questionnaires as well as working groups to gain practice in asking questions. The theoretical part of training also included lectures by specialists on different domains covered by the survey (HIV/AIDS, contraceptive methods, immunization, etc.), as well as introductions to standards of practice for haemoglobin and anthropometric measurements and for measurements on the iodate content in salt. Practical aspects of the traning included measurements and procedures for verification of immunization data, which were conducted both in classroom settings and at local health centres. Training was carried out according to standard MICS training procedures, including classroom presentations, mock interviews and written tests. All participants were instructed on how to complete the Household Questionnaire, the Questionnaire for Individual Women and Men, the Questionnaire for Children Under Five and the Questionnaire Form for Vaccination Records at Health Facility.

Training of field staff for both pre-test and data collection was mainly carried out in Romanian by UNICEF's National Consultant with technical support from field coordinators and in collaboration with UNICEF's MICS Regional Consultant. Towards the end of the training period, trainees spent four days in fieldwork (i.e. piloting), conducting interviews in Romanian and Russian as well as measurements and tests prescribed in the survey design. Piloting was conducted on 525 households in urban and rural areas of the Chi?inau municipality and of Straseni and Ialoveni districts/raions additionally selected on the basis of a non-MICS sample.

A total of 107 participants were trained as supervisors, field/office editors, interviewers and measurers. Participants who had medical training were made responsible for testing haemoglobin levels. Participants selected as supervisors and field editors were given two additional days of training on aspects of fieldwork supervision and editing of questionnaires.

The field staff was selected on the basis of psychological tests, communication skills, fluency in languages, interviewing capabilities as well as through classroom activity/field practice assessments and final post-training evaluations. Editors and supervisors were selected among the most experienced participants. The data were collected by fifteen teams; each team comprising of eight members: four interviewers (three female and one male), one editor, one measurer, one driver, and a supervisor.

Two field coordinators from the Implementing Agency coordinated and supervised all fieldwork activities with the support of UNICEF's National Consultant. Fieldwork progress was closely watched and supervised by UNICEF Moldova's MICS Coordinator and MICS experts of the UNICEF Regional Office, who assisted with field activities and regularly (approximately two to three weeks) assessed the quality on the basis of field check tables generated from parallel data entry.

The fieldwork was carried out between April 17 and June 30, 2012.

Data Collectors

Name	Abbreviation	Affiliation
National Public Health Centre	NPHC	

SUPERVISION

There is one supervisor for each of the 15 data collection teams in the field.

Data Processing

Data Editing

Data were entered using the CSPro software on 12 computers by 12 previously trained data-entry clerks. A supervisor and an expert in data processing and analysis were responsible for the quality of data entry. Completed questionnaires were returned each week from the field to the NCPH office in Chisinau for additional editing by two office editors. In order to ensure quality control, all questionnaires were double-entered and internal consistency checks were performed. Standard procedures and programmes developed under the global MICS4 programme and adapted to the Moldova questionnaires were used throughout. Data processing began on April 25, shortly after the fieldwork was initiated and was completed on July 10, 2012; however, due to inconsistencies between the data entered and the actual data in the questionnaires, the data processing period had to be extended until September 14, 2012. Data were analysed using the Statistical Package for Social Sciences (SPSS) software programme, Version 18. The standard SPSS syntax files and tabulation plans developed by UNICEF and adapted to the country’s needs were used to this end.

Data Appraisal

Estimates of Sampling Error

The sample of respondents selected in the 2012 Moldova Multiple Indicator Cluster Survey is only one of the samples that could have been selected from the same population, using the same design and 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 the estimates from all possible samples. The extent of variability is not known exactly, but can be estimated statistically from the survey data.

The following sampling error measures are presented in this appendix for each of the selected indicators:
- Standard error (se): Sampling errors are usually measured in terms of standard errors for particular indicators (means, proportions etc.). Standard error is the square root of the variance of the estimate. The Taylor linearization method is used for the estimation of standard errors.
- Coefficient of variation (se/r) is the ratio of the standard error to the value of the indicator, and is a measure of the relative sampling error.
- Design effect (deff) is the ratio of the actual variance of an indicator, under the sampling method used in the survey, to the variance calculated under the assumption of simple random sampling. The square root of the design effect (deft) is used to show the efficiency of the sample design in relation to the precision. A deft value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a deft value above 1.0 indicates an increase in the standard error due to the use of a more complex sample design.
- Confidence limits are calculated to show the interval within which the true value for the population can be reasonably assumed to fall, with a specified level of confidence. For any given statistic calculated from the survey, the value of that statistic will fall within a range of plus or minus two times the standard error (r + 2.se or r – 2.se) of the statistic in 95 percent of all possible samples of identical size and design.

For the calculation of sampling errors from MICS data, SPSS Version 18 Complex Samples module has been used. The results are shown in the tables that follow. In addition to the sampling error measures described above, the tables also include weighted and unweighted counts of denominators for each indicator.

Sampling errors are calculated for indicators of primary interest, at the national level, for urban and rural areas, and for the different regions. One of the selected indicators is based on households, six are based on household members, 28 are based on women, 17 are based on men and 18 are based on children under 5. All indicators presented here are in the form of proportions.

Other forms of Data Appraisal

A series of data quality tables are available to review the quality of the data and include the following:

- Age distribution of the household population
- Age distribution of eligible and interviewed women
- Age distribution of eligible and interviewed men
- Age distribution of children under 5 in household and children under 5 questionnaires
- Women’s completion rates by socio-economic characteristics of households
- Men’s completion rates by socio-economic characteristics of households
- Completion rates for under-5 questionnaires by socio-economic characteristics of households
- Completeness of reporting
- Completeness of information for anthropometric indicators
- Heaping in anthropometric measurements
- Observation of places for hand washing
- Observation of under-5s birth certificates
- Observation of vaccination cards
- Presence of mother in the household and the person interviewed for the under-5 questionnaire
- Selection of children age 2–14 years for the child discipline module
- School attendance by single age
- Sex ratio at birth among children ever born and living
- Births by calendar years
- Reporting of age at death in days
- Reporting of age at death in months

The results of each of these data quality tables are shown in appendix D in document "Moldova Multiple Indicator Cluster Survey 2012 - Final Report" pp.175-185.

Related Materials

Questionnaires

Moldova Multiple Indicator Cluster Survey 2012- Questionnaire

Title	Moldova Multiple Indicator Cluster Survey 2012- Questionnaire
Country	Moldova
Language	English
Table of contents	Household questionnaire modules Household member questionnaire modules Women questionnaire modules Children questionnaire modules Men questionnaire modules
Filename	Moldova_2012_MICS_Questionnaire.pdf

MICS4 Changes To Questionnaires v2.1 to v3.0

Title	MICS4 Changes To Questionnaires v2.1 to v3.0
Language	English
Filename	http://www.childinfo.org/mics4_questionnaire.html

MICS4 Questionnaire Form For Child Disability v3.0

Title	MICS4 Questionnaire Form For Child Disability v3.0
Language	English
Filename	http://www.childinfo.org/mics4_questionnaire.html

MICS4 Questionnaire Form For Vaccinations At Health Facility v3.0

Title	MICS4 Questionnaire Form For Vaccinations At Health Facility v3.0
Language	English
Filename	http://www.childinfo.org/mics4_questionnaire.html

Reports

Moldova Multiple Indicator Cluster Survey 2012 - Report

Title	Moldova Multiple Indicator Cluster Survey 2012 - Report
Date	2014-01-01
Country	Moldova
Language	English
Filename	https://dl.dropboxusercontent.com/u/18545482/Moldova_2012_MICS.pdf

Moldova Multiple Indicator Cluster Survey 2012 - Summary Report (Romanian)

Title	Moldova Multiple Indicator Cluster Survey 2012 - Summary Report (Romanian)
Date	2014-04-01

Country	Moldova
Language	Romanian
Filename	http://www.childinfo.org/files/Moldova_Mol_2012_MICS_Summary.pdf

Moldova Multiple Indicator Cluster Survey 2012 - Summary Report (English)

Title	Moldova Multiple Indicator Cluster Survey 2012 - Summary Report (English)
Date	2014-04-01
Country	Moldova
Language	English
Filename	http://www.childinfo.org/files/Moldova_2012_MICS_Summary.pdf

Technical documents

Changes to MICS Tabulation Plan, Data Quality Tabulations, and Sampling Error Tables since Version 2.1

Title	Changes to MICS Tabulation Plan, Data Quality Tabulations, and Sampling Error Tables since Version 2.1
Language	English
Filename	http://www.childinfo.org/mics4_plan.html

MICS4 01 Household Sample and Survey Characteristics (HH)

Title	MICS4 01 Household Sample and Survey Characteristics (HH)
Language	English
Filename	http://www.childinfo.org/mics4_plan.html

MICS4 02 Child Mortality (CM)

Title	MICS4 02 Child Mortality (CM)
Language	English
Filename	http://www.childinfo.org/mics4_plan.html

MICS4 03 Nutrition (NU)

Title	MICS4 03 Nutrition (NU)
Language	English
Filename	http://www.childinfo.org/mics4_plan.html

MICS4 04 Child Health (CH)

Title	MICS4 04 Child Health (CH)
Language	English
Filename	http://www.childinfo.org/mics4_plan.html

MICS4 05 Water and Sanitation (WS)

Title	MICS4 05 Water and Sanitation (WS)
Language	English
Filename	http://www.childinfo.org/mics4_plan.html

MICS4 06 Reproductive Health (RH)

Title	MICS4 06 Reproductive Health (RH)
Language	English
Filename	http://www.childinfo.org/mics4_plan.html

MICS4 07 Child Development (CD)

Title	MICS4 07 Child Development (CD)
Language	English
Filename	http://www.childinfo.org/mics4_plan.html

MICS4 08 Education (ED)

Title	MICS4 08 Education (ED)
Language	English
Filename	http://www.childinfo.org/mics4_plan.html

MICS4 09 Child Protection (CP)

Title	MICS4 09 Child Protection (CP)
Language	English
Filename	http://www.childinfo.org/mics4_plan.html

MICS4 10 HIV-AIDS, Sexual Behaviour and Orphanhood (HA)

Title	MICS4 10 HIV-AIDS, Sexual Behaviour and Orphanhood (HA)
Language	English
Filename	http://www.childinfo.org/mics4_plan.html

MICS4 11 Access to Mass Media and ICT Technology (MT)

Title	MICS4 11 Access to Mass Media and ICT Technology (MT)
Language	English
Filename	http://www.childinfo.org/mics4_plan.html

MICS4 12 Subjective Well-Being (SW)

Title	MICS4 12 Subjective Well-Being (SW)
Language	English
Filename	http://www.childinfo.org/mics4_plan.html

MICS4 13 Tobacco and Alcohol Use (TA)

Title	MICS4 13 Tobacco and Alcohol Use (TA)
Language	English
Filename	http://www.childinfo.org/mics4_plan.html

MICS4 Data Quality Tabulation Plan (DQ)

Title	MICS4 Data Quality Tabulation Plan (DQ)

Language	English
Filename	http://www.childinfo.org/mics4_plan.html

MICS4 Sampling Errors (SE)

Title	MICS4 Sampling Errors (SE)
Language	English
Filename	http://www.childinfo.org/mics4_plan.html

MICS4 Changes To Indicator List v2.1 to v3.0

Title	MICS4 Changes To Indicator List v2.1 to v3.0
Language	English
Filename	http://www.childinfo.org/mics4_questionnaire.html

MICS4 List of Indicators v3.0

Title	MICS4 List of Indicators v3.0
Language	English
Filename	http://www.childinfo.org/mics4_questionnaire.html

MICS4 Manual-Anthropometry

Title	MICS4 Manual-Anthropometry
Language	English
Filename	http://www.childinfo.org/mics4_manual.html

MICS4 Manual-Data Editing Guidelines

Title	MICS4 Manual-Data Editing Guidelines
Language	English
Filename	http://www.childinfo.org/mics4_manual.html

MICS4 Manual-Designing and Selecting the Sample

Title	MICS4 Manual-Designing and Selecting the Sample
Language	English
Filename	http://www.childinfo.org/mics4_manual.html

MICS4 Manual-Designing the Questionnaires

Title	MICS4 Manual-Designing the Questionnaires
Language	English
Filename	http://www.childinfo.org/mics4_manual.html

MICS4 Manual-Getting Started

Title	MICS4 Manual-Getting Started
Language	English
Filename	http://www.childinfo.org/mics4_manual.html

MICS4 Manual-Global Positioning Systems

Title	MICS4 Manual-Global Positioning Systems
Language	English
Filename	http://www.childinfo.org/mics4_manual.html

MICS4 Manual-Instructions for Interviewers

Title	MICS4 Manual-Instructions for Interviewers
Language	English
Filename	http://www.childinfo.org/mics4_manual.html

MICS4 Manual-Instructions for Supervisors Editors and Measurers

Title	MICS4 Manual-Instructions for Supervisors Editors and Measurers
Language	English
Filename	http://www.childinfo.org/mics4_manual.html

MICS4 Manual-Model Questionnaires

Title	MICS4 Manual-Model Questionnaires
Language	English
Filename	http://www.childinfo.org/mics4_manual.html

MICS4 Manual-Preparing for Data Collection and Conducting Fieldwork

Title	MICS4 Manual-Preparing for Data Collection and Conducting Fieldwork
Language	English
Filename	http://www.childinfo.org/mics4_manual.html

MICS4 Manual-Processing the Data

Title	MICS4 Manual-Processing the Data
Language	English
Filename	http://www.childinfo.org/mics4_manual.html

MICS4 Manual-Salt Iodization Testing

Title	MICS4 Manual-Salt Iodization Testing
Language	English
Filename	http://www.childinfo.org/mics4_manual.html