Jamaica - Multiple Indicator Cluster Survey 2011

Statistical Institute of Jamaica, United Nations Children's Fund

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Sampling

Sampling Procedure

The primary objective of the sample design for the Jamaica Multiple Indicator Cluster Survey (MICS) was to produce statistically reliable estimates of most indicators, at the national level, and for three regions of Jamaica: (a) the Kingston Metropolitan Area (KMA), comprising the whole of Kingston, St. Andrew urban, Spanish Town, and Portmore; (b) other towns; and (c) rural areas. A multi-stage, stratified cluster sampling approach was used for the selection of the survey sample.

The target sample size for the Jamaica MICS was determined as 7,200 households. For the calculation of the sample size, two key indicators were chosen: neonatal tetanus protection and father's support for learning.

A stratified two-stage sample design was used for the Jamaica MICS4, although the primary sampling units (PSUs) for the survey were selected in two steps. The Statistical Institute of Jamaica (STATIN)
developed a master sample for their household survey program based on the 2001 Jamaica Census data and cartographic materials. The PSUs were defined as enumeration districts (EDs), although a very small ED (with less than 25 households) was combined with a neighbouring ED to form a PSU. The master sampling frame had a total of 254 sampling strata, and 3 sample PSUs were selected per stratum, for a total of 762 sample PSUs. These master sample PSUs were then further grouped into 180 new sampling regions (within parish and urban/rural strata), and two sample PSUs were selected in each new sampling region for the MICS4, for a total sample of 360 PSUs or clusters. At each step the PSUs were selected systematically with probability proportional to size, based on the number of households in the 2001 Census.

Since the sampling frame (based on the 2001 Jamaica Census) was not up-to-date, a new listing of households was conducted in all the sample EDs prior to the selection of households. For this purpose, listing teams were formed, who visited each ED, and listed the occupied dwelling units.

Lists of households were prepared by the listing teams in the field for each ED. The households were then sequentially numbered from 1 to n (the total number of households in the ED), and the selection of 20 households in each ED was carried out using random systematic sampling procedures.

The sampling procedures are more fully described in "Multiple Indicator Cluster Survey 2010 - Final Report" pp.136-138.

Response Rate

Of the 7,289 households selected for the sample, 6,300 were found to be occupied. Of these, 5,960 were successfully interviewed yielding a household response rate of 94.6 percent. In the interviewed households, 5,143 women (age 15-49 years) were identified. Of these 5,032 were successfully interviewed, yielding a response rate of 97.8 percent. In addition, 1,651 children under age five were listed in the household questionnaire. Questionnaires were completed for 1,639 of these children, which corresponds to a response rate of 99.3 percent. Overall response rates of 92.6 and 93.9 were calculated for the women's and under-5's interviews respectively.

Weighting

The Jamaica Multiple Indicator Cluster Survey sample is not self-weighting. Given that the sampling probabilities vary by region and cluster, it was necessary to calculate sample weights at the cluster level. These weights were used in the subsequent analyses of the survey data in order to ensure that the weighted estimates reflect the distribution of the sampling frame.

The major component of the weight is the reciprocal of the sampling fraction employed in selecting the number of sample households in that particular sampling stratum(h) and PSU(i). The term fhi, the sampling fraction for the sample households in the i-th sample PSU in the h-th stratum, is the product of probabilities of selection at every stage in each sampling stratum.

A second component in the calculation of sample weights takes into account the level of non-response for the household and individual interviews. The adjustment for household non-response is equal to the inverse value of:
RRh = Number of interviewed households in stratum h/ Number of occupied households listed in stratum h

The non-response adjustment factors for women's and under-5's questionnaires are applied to the adjusted household weights. The numbers of eligible women and under-5 children were obtained from the roster of household members in the

Household Questionnaire for households where interviews were completed.

The design weights for the households were calculated by multiplying the above factors for each sample cluster. These weights were then standardized (or normalized), one purpose of which is to make the weighted sum of the interviewed sample units equal the total sample size at the national level. Normalization is achieved by dividing the full sample weights (adjusted for non-response) by the average of these weights across all households at the national level. This is performed by multiplying the sample weights by a constant factor equal to the unweighted number of households at the national level divided by the weighted total number of households (using the full sample weights adjusted for non-response). A similar normalization procedure was followed in obtaining standardized weights for the women's and under-5's questionnaires. Adjusted (normalized) household weights varied between 0.1377 and 7.3820 for the 360 sample clusters. The average normalized weights by region were: 1.0618 for KMA, 0.7436 for other urban and 1.1298 for rural. These relative weights reflect the overall allocation of sample PSUs by region, as the other urban region was over sampled.

Sample weights were appended to all data sets, and analyses were performed by weighting each household, woman or under-5 with these sample weights.

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 listing form, education, water and sanitation, household characteristics, child labour, child discipline, hand washing, insecticide treated nets, indoor residual spraying and salt iodization.

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

The women's questionnaire includes woman's background, child mortality, desire for last birth, maternal and newborn health, attitudes toward domestic violence, marriage/union, life satisfaction, female genital mutilation/cutting, illness symptoms, contraception, unmet need, sexual behavior and HIV/AIDS.

The children's questionnaire includes child's age, birth registration, early childhood development, breastfeeding, care of illness, immunization, malaria, vitamin A and anthropometry.

The modules included were first decided on by the Technical Committee from STATIN. These were later presented to the Steering Committee for approval. The questionnaires were further refined based on the results of the pre-test and again submitted to and approved by the Steering Committee.

Data Collection

Data Collection Dates

Start	End	Cycle
2011-01-03	2011-03-15	N/A

Data Collection Mode

Face-to-face [f2f]

DATA COLLECTION NOTES

Fieldwork staff was selected from a cadre of existing personnel strategically located across the island. These represent persons who have had experience working on previous household surveys including MICS3.The supervisors were chosen from the participants being trained, based on their mastery of the training content and their demonstrated administrative capabilities and good interpersonal skills.

In order to standardize the training for the main survey, a training of trainers was first conducted. These trainers were then deployed to train the prospective interviewers and supervisors at four locations during the period December 6 – 14, 2010. The four training locations were in Kingston, Linstead, Mandeville and Savanna-la-Mar. The class sizes varied between 20 to 30 trainees, based on the number of participants.

Training included lectures on interviewing techniques and the content and concepts of the questionnaires and mock interviews between trainees and persons who volunteered their time so that good practice was obtained in asking the relevant questions. A test was administered at the end of the training session, and based on the test results and the trainees' participation, 18 supervisors and 73 interviewers were selected.

The selected supervisors participated in an additional one day training on December 22, 2010 in order to make them aware of the task at hand, what is expected and how they were expected to carry out their duties and responsibilities.

Interviewing started on January 3, 2011, and ended on March 15, 2011. A total 5,960 household questionnaires, 5,032 individual women and 1,639 children under-five questionnaires was completed. There were, however, some problems during the period of the fieldwork, e.g.
- Violence in sections of St James and Westmoreland.
- Some upper income areas with gated communities did not grant access to interviewers.

Data Collectors

Name	Abbreviation	Affiliation
Statistical Institute of Jamaica	STATIN	

SUPERVISION

There are 18 supervisors in the field.

Data Processing

Data Editing

The MICS4 data processing system was designed to deliver the first results of the survey within a few weeks of the completion of the field work, since the data was processed in tandem with the fieldwork.

The questionnaires from the field were first manually edited/coded by four clerks who, based on predetermined standards, checked the questionnaires for completeness and thoroughness and, where necessary, inserted codes.

After this process was completed, the questionnaires were sent to the data processing unit where the information was transferred to microcomputers by four data entry operators, supervised by two programmers using the software package CSPro. This process was started on January 31, 2011 and ended on April 4, 2011. In order to ensure accuracy and minimize data entry errors, the questionnaires were entered separately by two data clerks and the programme highlighted any inconsistency in the data entered. These inconsistencies were eliminated by checking with the original questionnaire and the clerk whose data was incorrect made the necessary correction(s). This process continued until both sets of data were identical. Internal consistency checks were then followed to ensure that the quality of the data was maintained. Data were analysed using the Statistical Package for Social Sciences (SPSS) software program, Version 18, and the model syntax and tabulation plans developed by UNICEF were used for this purpose.

Data Appraisal

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 children under 5 in household and children under 5 questionnaires
- Observation of places for hand washing
- Observation of women's health cards
- 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

The results of each of these data quality tables are shown in appendix D in document "Multiple Indicator Cluster Survey 2010 - Final Report" pp.158-164.

Related Materials

Questionnaires

Jamaica Multiple Indicator Cluster Survey 2011- Questionnaire

Title	Jamaica Multiple Indicator Cluster Survey 2011- Questionnaire
Country	Jamaica
Language	English
Table of contents	Household questionnaire modules Household member questionnaire modules Women questionnaire modules Children questionnaire modules
Filename	JAM_2011_MICS_Questionnaire_En.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

Jamaica Multiple Indicator Cluster Survey 2011 - Report

Title	Jamaica Multiple Indicator Cluster Survey 2011 - Report
Country	Jamaica
Language	English
Filename	http://www.childinfo.org/files/MICS4_Jamaica_FinalReport_2011.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