Lesotho - Demographic and Health Survey 2009

Ministry of Health and Social Welfare (MOHSW)

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Sampling

Sampling Procedure

The 2009 LDHS was designed to provide estimates of health and demographic indicators at the national level, for urban-rural areas, and for each of the ten districts of Butha-Buthe, Leribe, Berea, Maseru, Mafeteng, Mohale's Hoek, Quthing, Qacha's Nek, Mokhotlong, and Thaba-Tseka. The 2009 LDHS sample points (clusters) were selected from a list of enumeration areas (EAs) defined for the 2006 Lesotho Population and Housing Census. A total of 400 clusters were drawn from the census sample frame, 94 in the urban areas and 306 in the rural areas. The clusters were selected with probability proportional to size (PPS).

Bureau of Statistics (BOS) staff conducted an exhaustive listing of households in each of the LDHS clusters from July through December 2009. From these lists, a systematic sample of households was drawn for a total of 10,000 households, about 25 households on average per cluster. All women age 15-49 identified in the entire sample of households were eligible for individual interview. In addition, half of these households (5,000 households) were selected randomly, and in these households, all men age 15-59 were eligible for individual interview. In the LDHS households where men were interviewed, all children under age 6 were eligible for height, weight, and mid-upper arm circumference measurements as well as anaemia testing. In the same households, women and men who were eligible for individual interview were also eligible for height, weight, and blood pressure measurements in addition to anaemia and HIV testing.

Note: See detailed sample design information in the APPENDIX A of the final 2009 Lesotho Demographic and Health Survey Final Report.

Response Rate

A total of 9,994 households were selected for the sample, of which 9,619 were found occupied during data collection. Of the existing households, 9,391 were successfully interviewed, yielding a household response rate of 98 percent.

In these households, 7,786 women were identified as eligible for the individual interview. Interviews were completed with 98 percent of these women. Of the 3,493 eligible men identified in the sub-sample of households selected, 95 percent were successfully interviewed. Overall, response rates were higher in rural areas than in urban areas.

See summarized response rates in Table 1.2 which is presented in the Final Report.

Questionnaires

Overview

Three types of questionnaires were used for the LDHS: the Household Questionnaire, the Woman's Questionnaire, and the Man's Questionnaire. The contents of the questionnaires were based on questionnaires developed for the MEASURE DHS programme. The LDHS questionnaires were developed in collaboration with a wide range of stakeholders. After the LDHS survey instruments were drafted, they were translated into and printed in the local language, Sesotho, for pre-testing.

The Household Questionnaire was used to list all the usual members and visitors to the selected households. Basic information was collected on the characteristics of each person listed, including age, sex, education, and relationship to the head of the household. The Household Questionnaire was also used to identify persons eligible for the individual interview. In addition, information was collected about the dwelling, such as the source of water, type of toilet facilities, materials used to construct the house, and ownership of various consumer goods. The results of anthropometric measurement and anaemia testing were recorded in the Household Questionnaire, as was the information on the consent of eligible household members for the HIV testing.

The Woman's Questionnaire was used to collect information on the following topics:
- Background characteristics (age, education, employment, religion, etc.)
- Birth history and childhood mortality
- Knowledge and use of family planning methods
- Antenatal, delivery, and postnatal care
- Infant feeding practices, including patterns of breastfeeding
- Childhood vaccinations
- Episodes of childhood illness and responses to illness
- Marriage and sexual activity
- Fertility preferences
- Husband's background and the woman's work status
- Adult mortality, including maternal mortality
- HIV/AIDS-related knowledge, attitudes, and behaviour
- Knowledge, attitudes, and behaviour related to other health issues

The Man's Questionnaire was shorter than the Woman's Questionnaire but covered many of the same topics, excluding the reproductive history and sections dealing with maternal and child health and maternal mortality.

In this survey, instead of paper questionnaires, personal data assistants (PDAs) were used to record responses during interviews. Bluetooth wireless technology was used for electronic transfer of files, such as transfer of the assignment sheet from the team supervisor to the interviewers, transfer of household questionnaires among survey team members, and transfer of completed questionnaires to team and central office supervisors. The PDA interview applications were implemented using the mobile version of CSPro, which was developed by the MEASURE DHS project in collaboration with the U.S. Census Bureau.

Data Collection

Data Collection Dates

Start	End	Cycle
2009-09-16	2010-01-26	N/A

Data Collection Mode

Face-to-face

DATA COLLECTION NOTES

TRAINING

A total of 109 persons, 34 males and 75 females, were trained to be the 2009 LDHS field staff. The training followed the standard DHS training procedures, including instructions on how to conduct interviews and how to fill in all three questionnaires, classroom demonstration and practice in administering the questionnaires using both paper questionnaires and PDAs, and tests. The participants also practiced interviewing in actual households. Their field experiences were discussed in class.

The first two weeks of the 2009 LDHS training were spent building the participants' familiarity with the survey instruments, enhancing knowledge and skills in conducting interviews, and practicing how to record responses in paper questionnaires. The PDAs were introduced in the third week of training. Participants were also trained to use the case-management system on the PDA to accomplish such tasks as selecting assigned interviews and receiving electronic case assignments from their supervisor. The fourth week was used to practice skills—interviewing in Sesotho, taking measurements of height, weight, and mid-upper arm circumference, testing for anaemia, and taking blood samples for HIV testing in the field; also during this week, supervisors and editors were selected. The training continued through the fifth week with a general overview of biomarkers and the PDA. The supervisors and editors were given instructions on how to perform their tasks during the fieldwork.

All participants received extensive classroom training plus additional field practice on biomarker data collection. They learned how to use informed consent procedures; how to take height, weight, and blood pressure measurements, how to collect finger prick blood spot samples for anaemia and HIV testing, and how to handle and package the dried blood spots. All staff received training in universal precautions and the disposal of hazardous waste.

FIELDWORK

Fieldwork for the 2009 LDHS commenced on 16 October 2009 and was completed on 26 January 2010. Data collection was carried out by 15 interviewing teams, each consisting of one supervisor, one field editor, three to four female interviewers, and one or two male interviewers. After Christmas break, due to drop out and iteration, the field staff was regrouped into 13 teams. Three Field Coordinator (FC) teams were formed; two consisted of one senior MOHSW staff and one data processing supervisor, and one team consisted of two senior MOHSW staff. The FC teams supervised the data collection teams throughout the fieldwork period.

Collected data were transferred from the interviewer's PDA to the team supervisor's at the end of the day. During visits by the FC teams, data files were transferred from the team supervisors' PDAs to the FCs' PDAs. Blood samples were also collected during these visits and transferred to the Lesotho Blood Transfusion Service (BLTS) laboratory.

Data Processing

Data Editing

All data files for the LDHS were stored in a computer at the MOHSW Headquarters. The data processing operation included secondary editing, which involved checking for inconsistencies. The LDHS data entry and editing programmes used CSPro, a computer software package specifically designed for processing survey data such as that produced by DHS surveys. Data processing commenced in November 2009 and was completed in February 2010.

Data Appraisal

Estimates of Sampling Error

Estimates derived from a sample survey are affected by two types of errors: 1) non-sampling errors, and 2) sampling errors. Non-sampling 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 2009 Lesotho DHS (LDHS) to minimise this type of error, non-sampling 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 2009 LDHS 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 2009 LDHS sample is the result of a multi-stage stratified design, and, consequently, it was necessary to use a more complex formula. The computer software used to calculate sampling errors for the 2009 LDHS is the sampling error module in ISSA (Integrated System for Survey Analysis). This module uses the Taylor linearisation method of variance estimation for survey estimates that are means or proportions. Another approach, the Jackknife repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

Note: See detailed sampling error calculation in the APPENDIX B of the Final Report.

Other forms of Data Appraisal

Data Quality Tables
- Household age distribution
- Age distribution of eligible and interviewed women
- Completeness of reporting
- Birth by calendar years
- Reporting of age at death in days
- Reporting of age at death in months
- Nutritional status of children

Note: See these data quality tables in APPENDIX C of the Final Report.

Related Materials

Questionnaires

Demographic and Health Survey 2009 - Questionnaire

Title	Demographic and Health Survey 2009 - Questionnaire
Author(s)	Ministry of Health and Social Welfare, Maseru, Lesotho
Date	2010-07-01
Country	Lesotho
Language	English
Filename	LSO_2009_DHS_questionnaire.pdf

Reports

Demographic and Health Survey 2009 - Final Report

Title	Demographic and Health Survey 2009 - Final Report
Author(s)	Ministry of Health and Social Welfare, Maseru, Lesotho ICF Macro, Calverton, Maryland, USA
Date	2010-11-01
Country	Lesotho
Language	English
Filename	http://www.dhsprogram.com/pubs/pdf/FR241/FR241.pdf

Demographic and Health Survey 2009 - Errate

Title	Demographic and Health Survey 2009 - Errate
Author(s)	Ministry of Health and Social Welfare, Maseru, Lesotho ICF Macro, Calverton, Maryland, USA
Date	2010-11-01
Country	Lesotho
Language	English
Filename	http://www.dhsprogram.com/pubs/pdf/FR241/FR241E.pdf

Demographic and Health Survey 2009 - HIV Fact Sheet

Title	Demographic and Health Survey 2009 - HIV Fact Sheet
Author(s)	MEASURE DHS
Date	2010-11-01
Country	Lesotho
Language	English
Description	Summary analysis, key indicators, and charts of survey findings.
Filename	http://www.dhsprogram.com/pubs/pdf/HF32/HF32.pdf