Namibia - Demographic and Health Survey 2006-2007

Ministry of Health and Social Services (MoHSS)

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Overview

Identification

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Overview

ABSTRACT
The 2006-07 Namibia Demographic and Health Survey (NDHS) is a nationally representative survey of 9,804 women age 15-49 and 3,915 men age 15-49. The 2006-07 NDHS is the third comprehensive survey conducted in Namibia as part of the Demographic and Health Surveys (DHS) programme. The data are intended to provide programme managers and policymakers with detailed information on levels and trends in fertility; nuptiality; sexual activity; fertility preferences; awareness and use of family planning methods; breastfeeding practices; nutritional status of mothers and young children; early childhood mortality, adult and maternal mortality; maternal and child health; and awareness and behaviour regarding HIV/AIDS and other sexually transmitted infections. The 2006-07 NDHS is the first NDHS survey to collect information on malaria prevention and treatment.

The 2006-07 NDHS has been a large-scale research project. Twenty-eight field teams interviewed about 9,200 households, 9,800 women and 3,900 men age 15-49. The interviews were conducted between November 2006 and March 2007. The survey covered about 500 primary sampling units in all regions.

The 2006-07 Namibia Demographic and Health Survey is designed to:

- Determine key demographic rates, particularly fertility, under-five mortality, and adult mortality rates;

- Investigate the direct and indirect factors that determine the level and trends of fertility;

- Measure the level of contraceptive knowledge and practice among women and men by method;

- Determine immunisation coverage and prevalence and treatment of diarrhoea and acute respiratory diseases among children under five; identify infant and young child feeding practices and assess the nutritional status of children age 6-59 months and women age 15-49 years;

- Assess knowledge and attitudes of women and men regarding sexually transmitted infections and HIV/AIDS, and evaluate patterns of recent behaviour regarding condom use;

- Identify behaviours that protect or predispose people to HIV infection and examine social, economic, and cultural determinants of HIV;

- Determine the proportion of households with orphans and vulnerable children (OVCs); and

- Determine the proportion of households with sick people taken care of at household level.

The 2006-07 NDHS is part of the worldwide Demographic and Health Surveys (DHS) programme funded by the United States Agency for International Development (USAID). DHS surveys are designed to collect data on fertility, family planning, and maternal and child health; assist countries in conducting periodic surveys to monitor changes in population, health, and nutrition; and provide an international database that can be used by researchers investigating topics related to population, health, and nutrition.

MAIN RESULTS

Fertility : The survey results show that Namibia has experienced a decline in fertility of almost two births over the past 15 years, with the fertility rate falling from 5.4 births per woman in 19901992 to 3.6 births in 2005-07.

Family planning : Knowledge of family planning in Namibia has been nearly universal since 1992. In the 2006-07 NDHS, 98 percent of all women reported knowing about a contraceptive method. Male condoms, injectables, and the pill are the most widely known methods.

Child health : Data from the 2006-07 NDHS indicate that the under-five mortality rate in Namibia is 69 deaths per 1,000 live

births (based on the five-year period preceding the survey).

Maternal health : In Namibia, almost all women who had a live birth in the five years preceding the survey received antenatal care from health professionals (95 percent): 16 percent from a doctor and 79 percent from a nurse or midwife. Only 4 percent of mothers did not receive any antenatal care.

Breastfeeding and nutrition : Breastfeeding is common in Namibia, with 94 percent of children breastfed at some point during childhood. The median breastfeeding duration in Namibia is 16.8 months.

Malaria: One in four households interviewed in the survey has at least one mosquito net, and most of these households have a net that has been treated at some time with an insecticide (20 percent).

HIV/AIDS and STIS : Knowledge of HIV and AIDS is universal in Namibia; 99 percent of women age 15-49 and 99 percent of men age 15-49 have heard of AIDS.

Orphans and vulnerable children : One-quarter of Namibian children under age 18 in the households sampled for the 2006-07 NDHS live with both parents, while one in three does not live with either parent. Seventeen percent of children under age 18 are orphaned, that is, one or both parents is dead.

Access to health facilities : Households interviewed in the 2006-07 NDHS were asked to name the nearest government health facility, the mode of transport they would use to visit the facility, and how long it takes to get to the facility using the transport of choice.

KIND OF DATA
Sample survey data

UNITS OF ANALYSIS
- Household

- Women age 15-49

- Men age 15-59

- Children under five

Scope

NOTES
The Namibia Demographic and Health Survey 2006-07 covers the following topics:

- Anthropometry

- Birth Registration

- Breastfeeding

- Fertility preferences

- Knowledge and use of contraception

- Health services

- Marriage

- Maternal and child Mortality

- Reproductive behaviour

- Reproductive Calendar

- Vaccination

- Woman's work

Coverage

GEOGRAPHIC COVERAGE
The primary objective of the 200-07 Namibia Demographic and Health Survey (NDHS) is to provide estimates with acceptable precision for important population characteristics such as fertility, contraceptive prevalence, selected health indicators, and infant mortality rates for Namibia as a whole, urban and rural areas separately, and each of the 13 regions.

UNIVERSE
The population covered by the 2006 NDHS is defined as the universe of all women age 15-49 in Namibia and all men age 15-54 living in the household.

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
Ministry of Health and Social Services (MoHSS)	

OTHER PRODUCER(S)

Name	Affiliation	Role
Macro International Inc.		Technical assistance

FUNDING

Name	Abbreviation	Role
United States Agency for International Development	USAID	Funding
Government of Namibia		Funding
United Nations Children's Fund	UNICEF	Funding
UK Department For International Development	DFID	Funding
The Global Fund		Funding

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Name	Affiliation	Role
United Nations Population Fund (UNFPA)		Additional support
World Health Organization (WHO)		Additional support

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
World Bank, Development Economics Data Group	DECDG		Generation of DDI documentation
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Sampling

Sampling Procedure

The primary objective of the 200-07 Namibia Demographic and Health Survey (NDHS) is to provide estimates with acceptable precision for important population characteristics such as fertility, contraceptive prevalence, selected health indicators, and infant mortality rates for Namibia as a whole, urban and rural areas separately, and each of the 13 regions.

SAMPLE FRAME

In 2001, the Central Bureau of Statistics (CBS) carried out a Housing and Population Census. Administratively, Namibia is divided into 13 regions. In turn, each region is subdivided into constituencies (107 in total). For the census taking, each administrative unit was sub-divided into enumeration areas (EAs), which is totally classified as urban or rural. A total of more than 4,000 EAs were demarcated for the census operation. Each EA comprised of about 100 households. For each EA, a sketch map was drawn. The sketch shows the EA boundaries, location of buildings, and other landmarks.

After the census, smaller EAs were merged with adjoining EAs and larger ones are split to form primary sampling units (PSUs) which are more or less uniform size. The list of PSUs is used as a sampling frame. Hence, a PSU can be an EA, part of an EA, or more than one EA. The total number of PSUs in the frame is about 3,750.

SAMPLE

A representative probability sample of 10,000 households was selected for the 2006-07 NDHS. The sample was selected in two stages with PSUs as the first stage and households as the second stage sampling units. A total of 500 PSUs were selected with probability proportional to size, the size being the number of households enumerated in the 2001 Population Census. The selection of the PSUs was a systematic, one-stage operation carried out independently for each of the 13 regions. In the second stage, a complete listing of households and mapping exercise was carried out for each PSU in November 2006 to January 2007. This exercise was carried out by field staff recruited for the 2006-07 Namibia Inter-Censal Demographic Survey (NIDS) and the NDHS. The NIDS was conducted by the CBS.

The list of households obtained was used as the frame for the second stage random selection of households. The listing excluded homeless people and people living in institutional households (army barracks, hospitals, police camps, boarding schools, etc.). In each PSU, 40 households were selected systematically and out of this sample 20 each were selected systematically for the NDHS and the NIDS, such that the two samples are independent. Although the two surveys were fielded at approximately the same time, in general the NIDS teams were ahead of the NDHS teams, allowing successful interviews with households selected for both surveys.

In clusters where the number of households was less than 40, some households were selected for both surveys and were visited by both NDHS and NIDS teams. In PSUs where the number of households was between 20 and 39, some households were visited by the NDHS and NIDS teams at different times. In PSUs with fewer than 20 households, all households were visited by both teams at different times.

Response Rate

A total of 9,970 households were selected for the sample, of which 9,410 were found and eligible for interview. Of the eligible households, 9,200 were successfully interviewed yielding a response rate of 98 percent. In the interviewed households, 10,352 women age 15-49 were identified as eligible for the women's questionnaire. Interviews were completed for 9,804 (95 percent) of these women. Of the 4,446 men age 15-49 identified as eligible for the men's questionnaire, 3,915 (88 percent) were successfully interviewed.

Questionnaires

Overview

The 2006-07 NDHS used three questionnaires: the Household Questionnaire, the Women's Questionnaire (women age 15-49), and the Men's Questionnaire (men age 15-49). These field instruments were based on the model questionnaires developed for the DHS programme-and adapted to the situation and needs of Namibia-as well as the questionnaires used in the 2000 NDHS. The survey instruments included the expanded HIV/AIDS module developed to assist countries in obtaining UNAIDS core Monitoring & Evaluation indicators. During the adaptation of the questionnaires, input was sought from a variety of organisations that will be using the data. The completed questionnaires were translated from English into six local languages, namely Afrikaans, Damara/Nama, Oshiwambo, Otjiherero, Rukwangali, and Silozi.

a) The main purpose of the Household Questionnaire was to collect information on demographic and socio-economic characteristics of the population and information about respondents' dwellings. In addition, the Household Questionnaire was used to identify women and men eligible for the individual interview. The Household Questionnaire listed all persons who spent the night preceding the interview in the household, including usual household members and visitors. The Household Questionnaire also recorded the height and weight of women and children under 6 years of age.

b) The Women's Questionnaire was used to collect information on the following topics:
- Background characteristics (age, education, religion, etc.),
- Reproductive history (to arrive at fertility and childhood mortality rates),
- Knowledge and use of family planning methods,
- Antenatal and delivery care,
- Infant feeding practices including patterns of breastfeeding,
- Vaccinations,
- Episodes of childhood illness and responses to illness, with a focus on treatment of fevers in the past two weeks,
- Marriage and sexual activity,
- Fertility preferences,
- Husband's background and the woman's work status,
- Adult mortality, including maternal mortality, and
- HIV/AIDS-related knowledge, attitudes, and behaviour.

c) Men were asked about their participation in the health care of their family and their attitudes on gender roles. Eligible men age 15-49 in selected households were interviewed using the Men's Questionnaire.

In addition to the questionnaires, other technical documents were prepared by MOHSS in collaboration with Macro International, including interviewers' and supervisors' training manuals; and interviewer and supervisor assignment sheets for fieldwork control.

Data Collection

Data Collection Dates

Start	End	Cycle
2006-10	2007-03	N/A

Data Collection Mode

Face-to-face

DATA COLLECTION NOTES

The 2006-07 NDHS was conducted by the Ministry of Health and Social Services (MOHSS). Macro International Inc. of Calverton, Maryland provided technical assistance through the MEASURE DHS project of USAID. Most of the funds for local costs of the survey were provided by the Government of Namibia, with assistance from the Global Fund, UNICEF, and DFID, through a SADC project. USAID provided additional funds for the implementation of the survey and technical assistance provided by Macro International.

PILOT SURVEY

The survey instruments were piloted in Hardap, Omaheke, and Otjozondjupa regions from 16 September to 23 September 2006. In each region, the pilot survey was conducted by two teams that included six interviewers and one supervisor. The questionnaires were pretested in both urban and rural clusters. About 150 women and 150 men were interviewed during the pilot survey and the results of the pilot survey were used to modify the survey instruments as necessary.

ADVOCACY AND PUBLICITY

A publicity campaign was implemented between September 5 and 23, 2006 to sensitize the communities about the survey and its objectives. The campaign was carried out by two teams that visited all 13 regions. Information about the survey was announced in the print media and on television, including the official launch of the survey by the MOHSS. T-shirts and leaflets were also prepared for this purpose.

TRAINING FOR FIELDWORKERS

A training programme was conducted for all NDHS field staff from 10 October 2006 to 10 November 2006. Approximately 230 persons representing all the major language groups in Namibia were trained. The trainers were from MOHSS, Macro International, and the Central Bureau of Statistics (CBS). The topics included sampling and use of the global positioning system.

The training consisted of classroom lectures, mock interviews, and practical interviews in the field. Based on the performance during training, 170 persons were recruited to work as supervisors, field editors, enumerators, and data entry personnel. Among this group, about 100 were trained to carry out household listing. Because there was a break for Christmas and New Year's Day, refresher training was conducted from 12 January to 3 February 2007.

HOUSEHOLD LISTING

Prior to the main survey, a complete list of households in the selected primary sampling units (PSUs) was carried out. This provided a sampling frame from which 20 households in each PSU were selected for the survey. The listing exercise was carried out by CBS and assisted by MOHSS.

DATA COLLECTION

The 2006-07 NDHS data were collected by 28 teams, each consisting of a team supervisor, a field editor, three female interviewers, one male interviewer, and a driver. The majority of team supervisors and editors were MOHSS staff. The assignment of field took into consideration the person's proficiency in the major languages spoken in Namibia.

Data Collectors

Name	Abbreviation	Affiliation
Ministry of Health and Social Services	MOHSS	

Name	Abbreviation	Affiliation
Macro International Inc.	MOHSS	

SUPERVISION

Quality assurance was maintained by national and regional supervisors through close supervision and monitoring during fieldwork. The questionnaires were edited by the field editors in the field and verified by the team supervisor before being transported to the MOHSS central office. National and regional supervisors ensured quality control through editing of questionnaires and observation of interviewers. Common mistakes were communicated and discussed with all team members.

Data Processing

Data Editing

Data entry commenced on 10 December 2006 and ended the third week of May 2007. CSPro-a Windows-based integrated Census and the Survey Processing package that combines and replaces the ISSA and IMPS packages, which was developed by the MEASURE DHS+ project in collaboration with the U.S. Census Bureau-was used for entry, editing, and tabulation of the NDHS data. Prior to data entry, a practical training was provided by Macro International to all data entry staff including the data manager, data entry supervisors, secondary data editors and data entry clerks. The data entry software was installed on 19 computers with one computer used as the central command or server unit for the data administrator. Data processing was performed by a team of 21 data entry operators, 2 data entry supervisors, 3 administrators/coders, and 3 secondary editors.

Data Appraisal

Estimates of Sampling Error

Sampling errors, on the other hand, can be evaluated statistically. The sample of respondents selected in the 2006-07 NDHS 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 2006-07 NDHS sample is the result of a multi-stage stratified design, and, consequently, it was necessary to use more complex formulae. The computer software used to calculate sampling errors for the 2006-07 NDHS is the ISSA Sampling Error Module. 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.

In addition to the standard error, ISSA 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. ISSA also computes the relative error and confidence limits for the estimates.

Sampling errors for the 2006-07 DHS are calculated for selected variables considered to be of primary interest for woman's survey and for man's surveys, respectively. The results are presented in an appendix of the Final Report for the country as a whole, for urban and rural areas, and for each of the eleven regions. 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.17 present the value of the statistic (R), its standard error (SE), the number of unweighted (N-UNWE) and weighted (N-WEIG) 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 the case of the total fertility rate, the number of unweighted cases is not relevant, as there is no known unweighted value for woman-years of exposure to child-bearing.

The confidence interval (e.g., as calculated for children ever born to women age 40-49) can be interpreted as follows: the overall average from the national sample is 4.390 and its standard error is 0.078. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate, i.e., 4.39 2 0.078. There is a high probability (95 percent) that the true average number of children ever born to all women age 40 to 49 is between 4.234 and 4.546.

Sampling errors are analyzed for two separate groups of estimates: (1) means and proportions, and (2) complex demographic rates. At the national level, mostly relative standard error values (SE/R) for the means and proportions are below 10 percent, however the highest relative standard error values are for indicators with very low values (i.e., less than 2 percent). So in general, the relative standard errors for most estimates for the country as a whole are small, except for indicators with very small values, i.e., for estimates which are rare in the population. For example, the relative standard error for the total fertility rate (TFR 0-3 years) is small (2.6 percent) since births are a fairly common event. However, for the mortality rates which are rarer events, the average relative standard error value is higher; for example, the relative standard error for the 0-4 year estimate of infant mortality is 7.1.
The relative standard error varies across sub-populations. For example, for the variable children ever born to women age 40-49, the relative standard errors as a percent of the estimated mean for the whole country, for the urban areas and for the rural areas are 1.8 percent, 3.1 percent and 2.0 percent, respectively.

For the total sample, the value of the design effect (DEFT), averaged over all selected variables, is 1.291 which means that, due to multi-stage clustering of the sample, the average standard error is increased by a factor of 1.291 over that in an equivalent simple random sample.

Other forms of Data Appraisal

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 2006-07 Namibia Demographic and Health Survey (NDHS) to minimize this type of error, non-sampling errors are impossible to avoid and difficult to evaluate statistically.