

Namibia - Demographic and Health Survey 1992

Ministry of Health and Social Services (MOHSS)

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Overview

Identification

ID NUMBER

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Overview

ABSTRACT

The 1992 Namibia Demographic and Health Survey (NDHS) is a nationally representative survey conducted by the Ministry of Health and Social Services, assisted by the Central Statistical Office, with the aim of gathering reliable information on fertility, family planning, infant and child mortality, maternal mortality, maternal and child health and nutrition. Interviewers collected information on the reproductive histories of 5,421 women 15-49 years and on the health of 3,562 children under the age of five years.

The Namibia Demographic and Health Survey (NDHS) is a national sample survey of women of reproductive age designed to collect data on mortality and fertility, socioeconomic characteristics, marriage patterns, breastfeeding, use of contraception, immunisation of children, accessibility to health and family planning services, treatment of children during episodes of illness, and the nutritional status of women and children. More specifically, the objectives of NDHS are:

- To collect data at the national level which will allow the calculation of demographic rates, particularly fertility rates and child mortality rates, and maternal mortality rates; To analyse the direct and indirect factors which determine levels and trends in fertility and childhood mortality, Indicators of fertility and mortality are important in planning for social and economic development;
- To measure the level of contraceptive knowledge and practice by method, region, and urban/rural residence;
- To collect reliable data on family health: immunisations, prevalence and treatment of diarrhoea and other diseases among children under five, antenatal visits, assistance at delivery and breastfeeding;
- To measure the nutritional status of children under five and of their mothers using anthropometric measurements (principally height and weight).

MAIN RESULTS

According to the NDHS, fertility is high in Namibia; at current fertility levels, Namibian women will have an average of 5.4 children by the end of their reproductive years. This is lower than most countries in sub-Saharan Africa, but similar to results from DHS surveys in Botswana (4.9 children per woman) and Zimbabwe (5.4 children per woman). Fertility in the South and Central regions is considerably lower (4.1 children per woman) than in the Northeast (6.0) and Northwest regions (6.7).

About one in four women uses a contraceptive method: 29 percent of married women currently use a method (26 percent use a modern method), and 23 percent of all women are current users. The pill, injection and female sterilisation are the most popular methods among married couples: each is used by about 7 to 8 percent of currently married women. Knowledge of contraception is high, with almost 90 percent of all women age 15-49 knowing of any modern method.

Certain groups of women are much more likely to use contraception than others. For example, urban women are almost four times more likely to be using a modern contraceptive method (47 percent) than rural women (13 percent). Women in the South and Central regions, those with more education, and those living closer to family planning services are also more likely to be using contraception.

Levels of fertility and contraceptive use are not likely to change until there is a drop in desired family size and until the idea of reproductive choice is more widely accepted. At present, the average ideal family size (5.0 children) is only slightly lower than the total fertility rate (5.4 children). Thus, the vast majority of births are wanted.

On average, Namibian women have their first child when they are about 21 years of age. The median age at first marriage is, however, 25 years. This indicates that many women give birth before marriage. In fact, married women are a minority in Namibia: 51 percent of women 15-49 were not married, 27 percent were currently married, 15 percent were currently living with a man (informal union), and 7 percent were widowed, divorced or separated. Therefore, a large proportion of children in Namibia are born out of wedlock.

The NDHS also provides information about maternal and child health. The data indicate that 1 in 12 children dies before the fifth birthday. However, infant and child mortality have been declining over the past decade. Infant mortality has fallen from 67 deaths per 1,000 live births for the period 1983-87 to 57 per 1,000 live births for the period 1988-92, a decline of about 15 percent. Mortality is higher in the Northeast region than elsewhere in Namibia.

The leading causes of death are diarrhoea, undernutrition, acute respiratory infection (pneumonia) and malaria: each of these conditions was associated with about one-fifth of under-five deaths. Among neonatal deaths low birth weight and birth problems were the leading causes of death. Neonatal tetanus and measles were not found to be major causes of death.

Maternal mortality was estimated from reports on the survival status of sisters of the respondent. Maternal mortality was 225 per 100,000 live births for the decade prior to the survey. NDHS data also show considerable excess male mortality at ages 15-49, which may in part be related to the war of independence

during the 1980s.

Utilisation of maternal and child health services is high. Almost 90 percent of mothers received antenatal care, and two-thirds of children were born in health facilities. Traditional birth attendants assisted only 6 percent of births in the five years preceding the survey. Child vaccination coverage has increased rapidly since independence. Ninety-five percent of children age 12-23 months have received at least one vaccination, while 76 percent have received a measles vaccination, and 70 percent three doses of DPT and polio vaccines.

Children with symptoms of possible acute respiratory infection (cough and rapid breathing) may have pneumonia and need to be seen by a health worker. Among children with such symptoms in the two weeks preceding the survey two-thirds were taken to a health facility. Only children of mothers who lived more than 30 km from a health facility were less likely to be taken to a facility.

About one in five children had diarrhoea in the two weeks prior to the survey. Diarrhoea prevalence was very high in the Northeast region, where almost half of children reportedly had diarrhoea. The dysentery epidemic contributed to this high figure: diarrhoea with blood was reported for 17 percent of children under five in the Northeast region. Among children with diarrhoea in the last two weeks 68 percent were taken to a health facility, and 64 percent received a solution prepared from ORS packets. NDHS data indicate that more emphasis needs to be put on increasing fluids during diarrhoea, since only 11 percent of mothers of children with diarrhoea said they increased the amount of fluids given during the episode.

Nearly all babies are breastfed (95 percent), but only 52 percent are put on the breast immediately. Exclusive breastfeeding is practiced for a short period, but not for the recommended 4-6 months. Most babies are given water, formula, or other supplements within the first four months of life, which both jeopardises their nutritional status and increases the risk of infection. On average, children are breastfed for about 17 months, but large differences exist by region. In the South region children are breastfed for less than a year, in the Northwest region for about one and a half years and in the Northeast region for almost two years.

Most babies are weighed at birth, but the actual birth weight could be recalled for only 44 percent of births. Using these data and data on reported size of the newborn, for all births in the last five years, it was estimated that the mean birth weight in Namibia is 3048 grams, and that 16 percent of babies were low birth weight (less than 2500 grams).

Stunting, an indication of chronic undernutrition, was observed for 28 percent of children under five. Stunting was more common in the Northeast region (42 percent) than elsewhere in Namibia. Almost 9 percent of children were wasted, which is an indication of acute undernutrition. Wasting is higher than expected for Namibia and may have been caused by the drought conditions during 1992.

Maternal height is an indicator of nutritional status over generations. Women in Namibia have an average height of 160 cm and there is little variation by region. The Body Mass Index (BMI), defined as weight divided by squared height, is a measure of current nutritional status and was lower among women in the Northwest and the Northeast regions than among women in the South and Central regions.

On average, women had a health facility available within 40 minutes travel time. Women in the Northwest region, however, had to travel more than one hour to reach the nearest health facility. At a distance of less than 10 km, 56 percent of women had access to antenatal services, 48 percent to maternity services, 72 percent to immunisation services, and 49 percent to family planning services. Within one hour of travel time, fifty-two percent of women had antenatal services, 48 percent delivery services, 64 percent immunisation services and 49 percent family planning services. Distance and travel time were greatest in the Northwest region.

KIND OF DATA

Sample survey data

UNITS OF ANALYSIS

- Household
- Women age 15-49

Scope

NOTES

The Namibia Demographic and Health Survey 1992 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 sample for the NDHS was designed to be nationally representative. The design involved a two- stage stratified sample which is self-weighting within each of the three health regions for which estimates of fertility and mortality were required--Northwest, Northeast, and the combined Central/South region. In order to have a sufficient number of cases for analysis, oversampling was necessary for the Northeast region, which has only 14.8 percent of the population. Therefore, the sample was not allocated proportionally across regions and is not completely self-weighting.

UNIVERSE

All women age 15-49 years who were either usual residents of the households in the sample or visitors present in the household on the night before the survey were eligible to be interviewed in the survey.

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
Ministry of Health and Social Services (MOHSS)	

OTHER PRODUCER(S)

Name	Affiliation	Role
Central Statistical Office		Technical assistance
Macro International Inc.		Technical assistance

FUNDING

Name	Abbreviation	Role
Government of Japan		Funding
World Bank		Channel of delivery

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
World Bank, Development Economics Data Group	DECDG		Generation of DDI documentation
Namibia Statistics Agency	NSA		Editing of DDI documentation

DDI DOCUMENT ID

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Sampling

Sampling Procedure

The sample for the Namibia Demographic and Health Survey (NDHS) was designed to yield a nationally representative probability sample of 5000 completed interviews with women between the ages of 15 and 49, regardless of their marital status, selected from 175 area units throughout the country. The design involved a two-stage stratified sample, which is self-weighting in each of the three main reporting domains: the Northwest region, the Northeast region, and the combined Central and South region.

AREA SAMPLING FRAME

The Republic of Namibia undertook a population and housing census in 1991 (the census dates were from 21 to 30 October). For this purpose, the country was divided into 27 census districts. Each district was in turn demarcated into enumeration areas (EAs). A list of 2177 EAs, together with their measure of size, which is the EA population as recorded manually from the Enumerator's Record Books, was compiled and used to select the area units for the NDHS.

SAMPLE DESIGN

Within each of the three domains (Northwest, Northeast, and Central/South), the sampling frame for the NDHS was stratified by urban and rural, and then by census district. The sample was then selected in two stages: at the first stage, 175 primary sampling units (PSU) were selected from the frame with probability proportional to size, the size being the population in the PSU. In general, a PSU corresponds to an EA as defined for the 1991 population and housing census. For each selected PSU, the Enumerator's Record Books obtained from the census was used as the frame for selecting the households to be included in the survey.

SAMPLING PARAMETERS

The objective of the sample design was to obtain 5000 completed individual interviews with women between the ages of 15 and 49 regardless of their marital status. To allow for nonresponse and other losses, an appropriate number of households was selected so as to obtain 5500 eligible women. A proportional allocation of the 5500 women to the three domains would have yielded approximately 2400, 800, and 2300 to the Northwest, Northeast and Central/South regions, respectively. While the samples for the Northwest and Central/South regions would have been sufficiently large for providing reliable estimates, it was not the case for the Northeast region. For this reason, it was necessary to double the sampling rate for the Northeast region relative to the other two regions. Table B.1 shows the allocation of the sample to the three regions as well as the implied number of households and PSUs to be selected in each region.

Response Rate

A total of 5,006 households Eligible women response rate were selected; of these, 4,101 were successfully interviewed. The shortfall is largely due to households being absent. This includes nine clusters not interviewed in Northeast region. One team in this region had experienced multiple problems and lagged considerably behind the other teams. In the interviewed households 5,847 eligible women were identified and 5,421 were successfully interviewed, for a response rate of 93 percent.

The household response rate for the NDHS was 90.9 percent, with not much difference between urban and rural areas. The high proportion of dwellings not found in the Northeast region is mainly due to the fact that fieldwork was terminated early in this region and nine dusters were not interviewed

Questionnaires

Overview

Two types of questionnaires were used in the NDHS: the Household Questionnaire and the Individual Questionnaire. The content of these questionnaires were based on the DHS model B questionnaire, which was designed for use in countries with low contraceptive prevalence. Additions and modifications to the model questionnaire were made in order to collect information particularly relevant to Namibia. Verbal autopsy and maternal mortality modules were added. The questionnaires were developed in English whereafter it was translated by experienced translators into six languages (Oshiwambo, Herere, Afrikaans, Lozi, Kwangali and Damara>Nama). The translation in the indigenous languages was necessary as it makes interviewing much less susceptible to interviewers interpretations. The prepared translation in the Damara>Nama language was not printed since the translated version would be required only in a small number of households, of which the majority speaks Afrikaans. All teams, however, carried a master copy of this questionnaire to serve as a reference should need arise.

a) The Household Questionnaire was used to enumerate all usual members of and visitors to the selected households and to obtain information on each individual's age, sex, relationship to the head of the household, and educational attainment. In addition, questions were asked about indicators of the socioeconomic position of the household, such as the source of water, sanitation facilities, and the availability of electricity and durable goods. Information recorded on the Household Questionnaire was used to identify respondents eligible for the individual interview.

b) The individual questionnaire was administered to women age 15-49 who spent the night preceding the household interview in the selected household. Information in the following areas was obtained during the individual interview:

1. Background characteristics of the respondent
2. Health services utilisation and availability
3. Reproductive behaviour and intentions
4. Knowledge and use of contraception
5. Breastfeeding, health, and vaccination status of children
6. Marriage
7. Fertility preferences
8. Husband's background and woman's work
9. Height and weight of children under five and their mothers
10. Causes of death in childhood
11. Maternal mortality

Data Collection

Data Collection Dates

Start	End	Cycle
1992-07	1992-11	N/A

Data Collection Mode

Face-to-face

DATA COLLECTION NOTES

PRETEST

In March and April 1992, a pretest was conducted to ensure that the questions were in a logical sequence, that the translations were comprehensible, appropriate and meaningful, and that the preceded answers were adequate. Fieldwork was conducted in both urban and rural enumeration areas (EAs) in order to accommodate the different languages used in the NDHS. Training for the pretest started in March and lasted two weeks. Staff from Macro International conducted the training. Altogether 16 interviewers were trained (mostly secondary school leavers), and two officers from the Ministry of Health and Social Services. The two trained officers and the Macro International staff supervised the field work. The fieldwork for the pretest was completed in two weeks. After the fieldwork, some interviewers and supervisors as well the Macro International staff gathered in Windhoek for a debriefing and all their experiences during the fieldwork were discussed. All these experiences were used to improve the quality of the final version of the questionnaire.

RECRUITMENT OF FIELD STAFF

The four health regions, namely the Northwest, Northeast, Central and South region were requested to select and submit names of suitable candidates for the main survey. Candidates were selected on the following criteria: maturity, minimum educational qualification to be grade 10 or higher, ability to read and speak one of the major Namibian languages chosen for NDHS, and willingness to work in the field for several months.

In all, 56 female candidates were recruited as interviewers and 5 senior officials from the Ministry of Health and Social Services (MOHSS). Two of the interviewers excelled in the training session and as only 5 senior officials from the 8 could be recruited from the MOHSS, it was decided that these 2 interviewers would be selected as supervisors. At the end of four weeks intensive training, 35 female candidates (28 interviewers, 7 field editors) and 7 supervisors were selected for the fieldwork. Five trainees were selected to become dataentry and editing staff. Assessment tests were used in selecting candidates. Due to the shortage of staff in the MOHSS and the workload on the staff of the Epidemiology Section a technical assistant was recruited for the Epidemiology Section to assist in the day-to-day preparation and logistic exercises of the NDHS activities.

TRAINING OF FIELD STAFF

Staff from the Epidemiology Section (MOHSS) and from Macro International conducted the training of field staff which lasted for four weeks, beginning June 1992. The training lasted four weeks. The first two weeks were devoted to classroom lectures, demonstrations of interviewing techniques, and instruction on how to complete the questionnaires and assignment sheets, using the instruction manuals as guides. By the third week of training, interviewers were grouped by language, with their supervisors, for practice reading the questionnaires and role playing. The fourth week was devoted to practice fieldwork in EAs not selected in the NDHS sample and near the training center. The completed questionnaires for practice fieldwork were checked by the trainers and supervisors and errors were discussed during the evening sessions before proceeding to the next EA. During training, a series of assessment tests was given to the interviewers and supervisors. These tests were graded and the results were used in selecting interviewers and supervisors; those candidates who had a better grasp of the questionnaire, and were adept at detecting errors in completed questionnaires, were designated as field editors.

A Macro International consultant conducted the anthropometry training and was assisted by two staff from the Nutrition Unit (MOHSS). Arrangements were made with nurseries, day care centers, and hospitals for practice measuring of infants and children. All trainees received anthropometric training.

MAIN SURVEY FIELDWORK

The main survey fieldwork commenced immediately after training. For most of the teams the first week of fieldwork was conducted in Windhoek where the training took place, covering the selected urban EAs.

At the end of the first week, a debriefing session was held, during which field staff and trainers related their experiences and problems. There were question and answer sessions and solutions to problems were discussed. The procedures and fieldwork plan and itinerary were discussed before the teams were posted to their respective regions for the fieldwork.

Fieldwork for the main survey was conducted between July and November 1992. Although the exercise for the main survey was planned to last only for three months (July to September 1992), it was extended and the last team continued to work into early December. There were logistic problems, including shortage of transport, two teams have been involved in accidents, some interviewers had to leave prematurely to rewrite their standard 10 (O-level) examination, some quitted the NDHS for permanent jobs and three supervisors had to leave the NDHS for personal reasons in October. The fieldwork of one team in Northeast region (Kavango) stopped fieldwork in December, although they still had to complete nine more of the 30 selected EAs. Continued fieldwork would delay the survey considerably, and since Northeast region had been oversampled, it would not affect estimates of fertility and mortality too much.

Sixty-seven EAs were selected from the Northwest region, 45 for Northeast, and 63 for the combined Central/South region. Women eligible for the individual interview were identified during the household interview. Team supervisors located the housing units and assigned selected households to the interviewers. Completed household and individual questionnaires were handed over to the field editor, who checked to ensure that all relevant questions were correctly recorded, that the skip instructions were properly followed, and that responses were internally consistent. This field editing was done before the team left the EA so that the interviewer could return to the respondent to resolve any errors. Each questionnaire was field edited prior to being sent to the office in Windhoek for data entry.

Data Collectors

Name	Abbreviation	Affiliation
Ministry of Health and Social Services	MOHSS	
Central Statistical Office	CSO	

SUPERVISION

Supervisors made sure that all the selected households and eligible respondents for an EA were interviewed, and that assignment sheets for the interviewers and supervisors were duly completed. All completed records were then tied together and sent to the Epidemiology Section office for data entry.

Data Processing

Data Editing

Data processing staff for the NDHS consisted of five data entry clerks of which one was used to control all incoming completed EAs from the field, and one supervisor (the head of data processing) from the Epidemiology Section. Periodic assistance was given by the Macro International staff. Four microcomputers were installed in the project office, Epidemiology Section, MOHSS, and were used to process the data utilizing ISSA software for processing. All data entry occurred in the project office in Windhoek.

Before questionnaires were passed for data entry, office editing was conducted. This entailed checking for internal consistency of responses recorded in the questionnaire, that skip instructions were properly followed, that there were no omissions, and that all entries were legible. This secured completeness of the questionnaires and speeded up the work of data entry staff.

Data entry started in July and was completed in the second week of December 1992. As data entry continued, editing was carried out every second week by running the ISSA program to check for inconsistencies, and corrections were made (when possible) by referencing the original questionnaire. A standard set of data quality tables were run every second week. These tables provided data on the performance of each team and were taken into the field to discuss the results with the supervisors to improve data collection. The staff from the Epidemiology Section visited the teams in the field every second week.

The staff from the Epidemiology section with assistance from the Macro International staff completed the final editing in December 1992, and secondary editing was done by Macro International staff. Preparation and presentation of the Preliminary report was conducted in November and December 1992. The preliminary report was published in December 1992.

Data Appraisal

Estimates of Sampling Error

The sample of women selected in the 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. The sampling error is 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.

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 women had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the NDHS sample is the result of a three-stage stratified design, and, consequently, it was necessary to use more complex formulas. The computer package CLUSTERS, developed by the International Statistical Institute for the World Fertility Survey, was used to compute the sampling errors with the proper statistical methodology.

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

Sampling errors for the NDHS 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, and for the three regions: Northwest, Northeast and Central/South. For each variable, the type of statistic (mean or proportion) and the base population are given in Table C. 1 of the Final Report. Tables C.2 to C.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 ($R \pm 2SE$), for each variable.

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 sub-populations. For example, for the variable EVBORN (children ever born to women aged 15-49), the relative standard error as a percent of the estimated mean for the whole country is 1.7 percent; they are 3.3 and 2.0 percent for urban and for rural areas, respectively.

The confidence interval (e.g., as calculated for EVBORN) can be interpreted as follows: the overall average from the national sample is 2.436 and its standard error is .041. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate, ie. $2.436 \pm .082$. There is a high probability (95 percent) that the true average number of children ever born to all women aged 15 to 49 is between 2.354 and 2.518.

Other forms of Data Appraisal

Nonsampling error is the result 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 NDHS to minimize this type of error, nonsampling errors are impossible to avoid and difficult to evaluate statistically.