

Philippines - National Demographic and Health Survey 1998

National Statistics Office

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Overview

Identification

ID NUMBER
PHL-NSO-NDHS-1998-v1.0

Version

VERSION DESCRIPTION
v0.1: Basic raw data, obtained from data entry (before editing)

PRODUCTION DATE
2010-03-09

Overview

ABSTRACT
The 1998 National Demographic and Health Survey (NDHS) was a nationally representative survey of 13,983 women aged 15-49 years.

The primary objective of the NDHS is to provide up-to-date information on fertility levels; determinants of fertility; fertility preferences; infant and childhood mortality levels; awareness, approval, and use of family planning methods; breastfeeding practices; and maternal and child health. This information is intended to assist policy makers and program managers in evaluating and designing programs and strategies for improving health and family planning services in the country.

KIND OF DATA
Sample survey data [ssd]

UNITS OF ANALYSIS
Women 15-49 years old

Scope

NOTES
The scope of the 1998 National Demographic and Health Survey includes:

- **HOUSEHOLD:** Household characteristics, household listing, education, water and sanitation, type of toilet facility, maternal mortality and security of tenure and durability of housing, and ownership of various durable goods.
- **WOMEN:** Women's background characteristics, reproductive history, knowledge and use of family planning methods, fertility references, antenatal, delivery and postnatal care, breastfeeding and infant feeding practices, vaccinations and childhood illnesses, marriage and sexual activity, woman's work and husbands background characteristics, infant's and children's feeding practices, childhood mortality, and maternal mortality.
- **HEALTH:** Environmental health, health facility utilization, communicable and non-communicable diseases, traditional medicine and health care financing.

TOPICS

Topic	Vocabulary	URI
childbearing, family planning and abortion [8.2]	CESSDA	http://www.nesstar.org/rdf/common

fertility [14.2]	CESSDA	http://www.nesstar.org/rdf/common
morbidity and mortality [14.4]	CESSDA	http://www.nesstar.org/rdf/common
health care and medical treatment [8.5]	CESSDA	http://www.nesstar.org/rdf/common
nutrition [8.7]	CESSDA	http://www.nesstar.org/rdf/common
specific diseases and medical conditions [8.9]	CESSDA	http://www.nesstar.org/rdf/common

Coverage

GEOGRAPHIC COVERAGE

Philippines

Metro Manila

Cordilera Administrative Region

Ilocos Reion

Cagayan Valley

Central Luzon

Southern Tagalog

Bicol Region

Western Visayas

Central Visayas

Eastern Visayas

Western Mindanao

Northern Mindanao

Southern Mindanao

Central Midanao

Autonomous Region in Muslim Mindanao

Caraga

Urban

Rural

GEOGRAPHIC UNIT

Region

UNIVERSE

The survey covered all de jure household members (usual resident), all women 15-49 years old residents and visitors of the sample household. Persons who resided in institutions were not within the scope of the survey.

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
National Statistics Office	National Economic and Development Authority (NEDA)

OTHER PRODUCER(S)

Name	Affiliation	Role
Macro International Inc.		Technical assistance to the project through the DHS+ Program

FUNDING

Name	Abbreviation	Role
United States Agency for International Development	USAID	Funding agency
Department of Health	DOH	Funding assistance

OTHER ACKNOWLEDGEMENTS

Name	Affiliation	Role
Department of Health (DOH)	Philippine government	Provided technical inputs during the preparatory phase
University of the Philippines Population Institute (UPPI)	University of the Philippines	Provided technical inputs during the preparatory phase
Commission on the Population (POPCOM)	DOH	Provided technical inputs during the preparatory phase
Food and Nutrition Research Institute	DOH	Provided technical inputs during the preparatory phase

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Percival A. Salting	PAS	NSO-DSSD	Documentor

DATE OF METADATA PRODUCTION

2010-03-09

DDI DOCUMENT VERSION

Version 1.0 (March 2010)

DDI DOCUMENT ID

DDI-PHL-NSO-NDHS-1998-v1.0

Sampling

Sampling Procedure

The 1998 NDHS aims at providing estimates for each of the sixteen regions of the country with an acceptable precision for socio-demographic characteristics like fertility, family planning use, and health and mortality indicators. The NDHS sample design consisted of selecting some 12,500 households in 755 enumeration areas (EAs) which was expected to produce completed interviews with approximately 15,000 women age 15-49. The sample was first allocated to each of the regions. Within each region, a self-weighting sampling scheme was adopted; however, due to the non-proportional allocation of the sample to the regions, the NDHS sample is not self-weighting at the national level and weighting factors have been applied to the data.

The 1998 NDHS sample is a sub-sample of the new master sample of the Integrated Survey of Households (ISH) of the NSO. The expanded sample of ISH consists of 3,416 enumeration areas selected from the 1995 census frame with a sophisticated design that allows for regional estimates with periodic rotation of panels. The ISH expanded sample was drawn by first, selecting barangays systematically with probability proportional to size. In barangays that consist of more than one EA, a subsequent step consisted of selecting the sample EA systematically with probability proportional to size. Because the primary sampling units in the ISH were selected with probability proportional to size, the EAs for the NDHS were sub-selected from the ISH with equal probability to make the NDHS selection equivalent to selection with probability proportional to size. A total of 755 primary sampling units were utilized for the NDHS. Fieldwork in three sample EA was not possible, so a total of 752 EAs were covered.

The list of households based on the household listing operation conducted in all the NDHS sample points in November 1997 served as the frame for the selection of the NDHS sample households. A different scheme for selecting sample households was applied to urban and rural areas. A systematic sampling of households was carried out in urban areas in order to spread the NDHS sample throughout the sampled EA, while compact clustering was employed in rural areas in order to facilitate field operations. This was accomplished by taking a specified number of consecutive households starting with a household selected at random.

Response Rate

A total of 13,708 households were selected for the sample, of which 12,567 were occupied. Of these households occupied, 99 percent or 12,407 were successfully interviewed. The shortfall is primarily due to dwellings that were vacant or in which the inhabitants had leave for an extended period at the time they were visited by the interviewing teams.

In the households interviewed, 14,390 women were identified as eligible for the individual interview (i.e. age 15-49) and interviews were completed for 13,983 or 97 percent of them. The principal reason for non-response among eligible women was the failure to find them at home despite repeated visits to the household. The refusal rate was low.

Questionnaires

Overview

There were three types of questionnaires used for the 1998 NDHS: the Household Questionnaire (NDHS Form 1), the Individual Questionnaire (NDHS Form 2), and the Health Module (NDHS Form 3). The contents of the first two questionnaires were based on the DHS Model A Questionnaire, which is designed for use in countries with relatively high levels of contraceptive use. These model questionnaires were adapted for use in the Philippines during a series of meetings with representatives from the DOH, UPPI, POPCOM, FNRI, USAID/Philippines, and Macro International Inc. Draft questionnaires were then circulated to other interested groups. These questionnaires were developed in English (see Appendix E) and were translated into six of the most common dialects, namely, Tagalog, Cebuano, Ilocano, Bicol, Hiligaynon, and Waray.

NDHS Form 1 - HOUSEHOLD QUESTIONNAIRE

The Household (HH) Questionnaire was used to list all the usual members of the sample household, and visitors who slept in the sample household the night prior to the date of interview and some of their characteristics such as name, age, sex, education, relationship to household head, and usual residence. Information on age and sex from the HH Questionnaire was used to identify eligible women for interview using the Individual Questionnaire. Questions about the dwelling such as the source of drinking water, type of toilet facilities, ownership of various consumer goods and use of iodized were also included in the Household Questionnaire.

NDHS Form 2 - INDIVIDUAL QUESTIONNAIRE

The Individual Questionnaire was used to collect information on the following topics:

- Respondent's background characteristics (age, education, religion, etc.)
- Reproductive history and fertility preferences
- Knowledge and use of contraception
- Availability of family planning supplies and services
- Pregnancy and breastfeeding
- Child immunization and health
- Marriage
- Husband's background, woman's work and residences
- Maternal mortality

NDHS Form 3 - HEALTH MODULE

The Health Questionnaire was developed in close collaboration with the DOH in partial substitution for the cancelled National Health Survey. It included questions on health practices of the household, awareness about selected communicable and non-communicable diseases, utilization of and satisfaction with various types of health facilities, knowledge concerning traditional medicines, and health care financing.

Data Collection

Data Collection Dates

Start	End	Cycle
1998-03-03	1998-05-15	N/A

Time Periods

Start	End	Cycle
1993-01-01	1998-05-15	N/A

Data Collection Mode

Face-to-face [f2f]

Data Collection Notes

PRETEST, TRAINING AND FIELDWORK

The NDHS questionnaires were pretested in October 1997. Female interviewers were trained at the NSO central office in Manila, after which they conducted interviews in various locations in the field under the observation of staff from NSO central office. Altogether, approximately 160 Household, Woman's and Health Questionnaires were completed. Based on observations in the field and suggestions made by the pretest field teams, revisions were made in the wording and translations of the questionnaires.

Training for the main survey took place in two phases. In the first phase, approximately 35 trainers from NSO, DOH, UPPI, and POPCOM gathered for two weeks in late January at a training center near the NSO central office in Manila. They received thorough training in how to fill and edit the questionnaires, how to supervise fieldwork, and how to train field staff in their respective training sites. These trainers then dispersed to the six training sites (Agoo, Malolos, Lucena City, Cebu City, Iloilo City, and Davao City) where they trained some 261 interviewers, 44 supervisors, and 43 field editors for three weeks (February 9-27, 1998). Initially, training consisted of lectures on how to complete the questionnaires, with mock interviews between participants to gain practice in asking questions. Towards the end of the training course, the participants spent several days in practice interviewing in households near the training sites.

Fieldwork for the NDHS was carried out by 44 interviewing teams. Each team, except that which covered Palawan, Lanao del Sur and Maguindanao, consisted of 1 supervisor, 1 field editor, and 3-7 female interviewers, for a total of 348 field staff. Fieldwork commenced on 3 March 1998 and was completed in the first week of May 1998. Periodic field monitoring of the NDHS operations was done by the NSO regional and provincial officials, NDHS regional supervisors and selected NSO central office staff.

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Data Collectors

Name	Abbreviation	Affiliation
National Statistics Office	NSO	NEDA

Supervision

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Data Processing

Data Editing

Review and editing of NDHS questionnaires was done by the field editors while they were in the enumeration areas to facilitate the verification of the forms. The editors were expected to review questionnaires of at least 8 households per day. The supervisors of teams with more than four interviewers assisted the editors in reviewing the questionnaires.

Folioing of forms was done by the team supervisors before submission to the Provincial Office. The Provincial Statistics Officers were responsible for the transmittal of these forms to the Central Office.

On March 16, 1998, eighteen hired NDHS data processors started the data processing at the Central Office. Office editing, data entry, key verification (100%), and machine processing were done simultaneously. There were two stages involved in the machine processing. In the first stage, keyed-in data were checked for completeness and were matched with the verification data. In the second stage, inconsistencies in the data were noted and checked. All the data processing activities were completed on June 30, 1998.

Data Appraisal

Estimates of Sampling Error

ESTIMATES OF SAMPLING ERRORS

The estimates from a sample survey are affected by two types of errors: (1) nonsampling errors, and (2) sampling errors. Nonsampling 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 NDHS to minimize this type of error, nonsampling 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 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 NDHS sample is the result of a two-stage stratified design, and, consequently, it was necessary to use more complex formulae. The computer software used to calculate sampling errors for the 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.

The Taylor linearization method treats any percentage or average as a ratio estimate, $r = y/x$, where y represents the total sample value for variable y , and x represents the total number of cases in the group or subgroup under consideration. The variance of r is computed using a formula given below with the standard error being the square root of the variance.

The Jackknife repeated replication method derives estimates of complex rates from each of several replications of the parent sample, and calculates standard errors for these estimates using simple formulae. Each replication considers all but one clusters in the calculation of the estimates. Pseudo-independent replications are thus created. In the NDHS, there were 752 non-empty clusters. Hence, 751 replications were created.

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 NDHS are calculated for selected variables considered to be of primary interest. The results are presented in this appendix for the country as a whole, for urban and rural areas, and for each of the 16 regions. 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 since there is no known unweighted value for woman-years of exposure to childbearing.

The confidence interval (e.g., as calculated for children ever born to women age 15-49) can be interpreted as follows: the overall average from the national sample is 2.156 and its standard error is .029. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate, i.e., $2.156 \pm 2 \times .029$. 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 2.098 and 2.214.

Sampling errors are analyzed for the national sample and for two separate groups of estimates: (1) means and proportions, and (2) complex demographic rates. The relative standard errors (SE/R) for the means and proportions range between 0 percent and 33 percent with an average of 3.6 percent; the highest relative standard errors are for estimates of very low values (e.g., currently using male sterilization among currently married women). If estimates of very low values (less than 10 percent) were removed, then the average drops to 1.8 percent. So in general, the relative standard error for most estimates for the country as a whole is small, except for estimates of very small proportions. The relative standard error for the total fertility rate is small, 2.3 percent. However, for the mortality rates, the average relative standard error is higher, 8.4 percent.

There are differentials in the relative standard error for the estimates of sub-populations. For example, for the variable with secondary education or higher, the relative standard errors as a percent of the estimated mean for the whole country, for the rural areas, and for Cagayan Valley Region are 0.9 percent, 1.8 percent, and 5.4 percent, respectively. For the total sample, the value of the design effect (DEFT) averaged over all variables is 1.27, which means that due to multi-stage clustering of the sample variance is increased by a factor of 1.56 over that in an equivalent simple random sample.

Other forms of Data Appraisal

QUALITY OF THE DATA: NONSAMPLING ERRORS

Slight heaping on ages ending with 0 and 5 is detected throughout all ages for both sexes. Errors are particularly notable in the age reporting at ages 15 and 49 years--the lower and upper limits of eligibility for individual in the NDHS interview. The age ratios at 15 for women is 1.00, while for men it is 0.95 indicating a better age reporting by the females at this age. At age 49, the ratios are 0.93 and 0.97 for women and men, respectively, demonstrating the tendency for both males and females to either understate or overstate their age.

Household weights are applied to the age distribution of women reported in the individual interview, to investigate if there is a bias in the age reporting in the individual woman's interview.

The expected pattern of declining percentage as age increases, and that there is virtually no difference between the age distribution of women recorded in the household schedule and those interviewed with the individual questionnaire, indicating the absence of a bias. Response rates vary slightly across the age of the respondents.

With the exception of information on child's size at birth, the percentage of cases with missing information is extraordinarily low, and information on dating, of events seem to be complete.

There is a slight heaping in the reported total number of births in 1990 and the number of children still living. Information on month and year of birth is available for virtually all

children. Birth dates of dead children are less complete than for surviving children; nevertheless, this information is known for 95.8 percent of children. The overall sex ratio at birth for all births is 106, while from year to year there are fluctuations without any indication of bias except for 1995 when overall sex ratio at birth was unusually high at 127. Sex ratio for dead children is much higher than for surviving children, indicating higher mortality among male children. The calendar ratios show that there was a transference of births from 1991 to the earlier and later years. The ratio of births in 1991 to the average of the two adjoining years is 0.96, while the ratios for 1990 and 1991 are 1.02 and 1.06, respectively.

The percentage of early neonatal deaths (deaths within the first 7 days after birth) among all neonatal deaths (deaths within the first month of birth) increases as infant mortality decreases. However, there is a decreasing proportion of neonatal among infant deaths. It should also be noted that heaping at age 12 months is more apparent in the more distant past (5 years or more prior to the survey) than in the most recent period, demonstrating that reporting of age at death is improving.