Egypt, Arab Rep. - Demographic and Health Survey 2005

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Sampling

Sampling Procedure

SAMPLE DESIGN

The primary objective of the sample design for the 2005 EDHS was to provide estimates of key population and health indicators including fertility and child mortality rates for the country as a whole and for six major administrative regions (the Urban Governorates, urban Lower Egypt, rural Lower Egypt, urban Upper Egypt, rural Upper Egypt, and the Frontier Governorates). In addition, seven governorates targeted for special USAID-sponsored family planning and health initiatives were over sampled, namely: Fayoum, Beni-Suef, Menya, Qena, and Aswan in Upper Egypt, and Cairo and Alexandria.

In the Urban Governorates, Lower Egypt, and Upper Egypt, the 2005 EDHS design allowed for governorate-level estimates of most of the key variables, with the exception of the fertility and mortality rates. In the Frontier Governorates, the sample size was not sufficiently large to provide separate estimates for the individual governorates. To meet the survey objectives, the number of households selected in the 2005 EDHS sample from each governorate was not proportional to the size of the population in the governorate. As a result, the 2005 EDHS sample is not self-weighting at the national level, and weights have to be applied to the data to obtain the national-level estimates presented in this report.

SAMPLE SELECTION

The sample for the 2005 EDHS was selected in three stages. The first stage included selecting the primary sampling units. The units of selection were shiakhas/towns in urban areas and villages in rural areas. A list of these units which was based on the 1996 census was updated to August 2004 using information obtained from CAPMAS, and this list was used in selecting the primary sampling units (PSUs). Prior to the selection of the PSUs, the frame was further reviewed to identify any administrative changes that had occurred after August 2004. The updating process included both office work and field visits during a one-month period. After it was completed, urban and rural units were separately stratified by geographical location in a serpentine order from the northwest corner to the southeast corner within each governorate. During this process, shiakhas or villages with a population less than 2,500 were grouped with contiguous shiakhas or villages (usually within the same kism or markaz) to form units with a population of at least 5,000. After the frame was ordered, a total of 682 primary sampling units (298 shiakhas/towns and 384 villages) were selected.

The second stage of selection involved several steps. First, detailed maps of the PSUs chosen during the first stage were obtained and divided into parts of roughly equal population size (about 5,000). In shiakhas/towns or villages with a population of 20,000 or more, two parts were selected. In the remaining smaller shiakhas/towns or villages, only one part was selected. Overall, a total of 1,019 parts were selected from the shiakhas/towns and villages in the 2005 EDHS sample.

A quick count was then carried out to provide an estimate of the number of households in each part. This information was needed to divide each part into standard segments of about 200 households. A group of 48 experienced field workers participated in the quick count operation. They were organized into 16 teams, each consisting of 1 supervisor, 1 cartographer and 1 counter. A one-week training course conducted prior to the quick count included both classroom sessions and two field practices in a shiakha/town and a village not covered in the survey. The quick-count operation took place between the end of October 2004 and January 2005.

As a quality control measure, the quick count was repeated in 10 percent of the parts. If the difference between the results of the first and second quick count was less than 2 percent, then the first count was accepted. No major discrepancies were found between the two counts in most of the areas for which the count was repeated.

After the quick count, a total of 1,359 segments were chosen from the parts in each shiakha/town and village in the 2005 EDHS sample (i.e., two segments were selected from each of the 682 PSUs with the exception of 5 PSUs for which only one segment was selected). A household listing operation was then implemented in each of the selected segments. To conduct this operation, 13 supervisors and 26 listers were organized into 13 teams. Generally, each listing team consisted of a supervisor and two listers. A one-week training course for the listing staff was held in mid-January 2005. The training involved classroom lectures and two days of field practice in three urban and rural locations not covered in the survey. The listing operation took place during a five-week period, beginning immediately after the training.

About 10 percent of the segments were relisted. Two criteria were used to select segments for relisting. First, segments were relisted when the number of households in the listing differed markedly from that expected according to the quick count information. Second, a number of segments were randomly selected to be relisted as an additional quality control test. No major discrepancies were found in comparisons of the listings.

The third stage involved selecting the household sample. Using the household listing for each segment, a systematic random sample of households was selected for the 2005 EDHS sample. All ever-married women 15-49 who were usual residents or who were present in the sampled households on the night before the interview were eligible for the EDHS

Note: See detailed description of sample design in APPENDIX B of the report which is presented in this documentation.

Response Rate

Out of 22,807 households selected for the 2005 EDHS, 22,211 households were found, and 21,972 households were successfully interviewed which represents a response rate of 99 percent.

A total of 19,565 women were identified as eligible to be interviewed. Out of these women, 19,474 were successfully interviewed, which represents a response rate of 99.5 percent. The household response rate exceeded 98 percent in all residential categories, and the response rate for eligible women exceeded 99 percent in all areas. In general, response rates were slightly higher in rural areas than urban areas.

Note: See summarized response rates by place of residence in Table 1.4 of the report which is presented in this documentation.

Questionnaires

Overview

The 2005 EDHS involved two questionnaires: a household questionnaire and an individual questionnaire. The questionnaires were based on the model survey instruments developed by MEASURE DHS+ for countries with high contraceptive prevalence. Questions on a number of topics not covered in the DHS model questionnaires were also included in the 2005 EDHS questionnaires. In some cases, those items were drawn from the questionnaires used for earlier rounds of the DHS in Egypt. In other cases, the questions were intended to collect information on new topics.

The household questionnaire consisted of three parts: a household schedule, a series of questions related to the socioeconomic status of the household, height and weight measurement, and anemia testing. The household schedule was used to list all usual household members and visitors and to identify those present in the household during the night before the interviewer's visit. For each of the individuals included in the schedule, information was collected on the relationship to the household head, age, sex, marital status (for those 15 years and older), educational attainment, repetition and dropout (for those 6-24 years), attendance of pre-school programs (for those 3-5 years old), and child labor (for those 6-14 years). The second part of the household questionnaire obtained information on characteristics of the physical and social environment of the household (e.g., type of dwelling, availability of electricity, source of drinking water, household possessions, and the type of salt the household used for cooking). Height and weight measurements were obtained and recorded in the last part of the household questionnaire for ever-married women age 15-49 years, children born since January 2000, and never-married adolescents age 10-19 years. In a subsample of one-third of households, all eligible women, all children born since January 2000, and all adolescents age 10-19 years were eligible for anemia testing.

The individual questionnaire was administered to all ever-married women age 15-49 who were usual residents or who were present in the household during the night before the interviewer's visit. It obtained information on the following topics:
• Respondent's background
• Reproduction
• Contraceptive knowledge and use
• Fertility preferences and attitudes about family planning
• Pregnancy and breastfeeding
• Immunization and child health
• Husband's background and women's work
• Female circumcision
• Health care access and other health concerns
• HIV/AIDS and other sexually transmitted infections
• Mother and child nutrition.

In addition, a domestic violence section was administered to women in the subsample of households selected for the anemia testing. One eligible woman was selected randomly from each of the households in the subsample to be asked the domestic violence section.

The individual questionnaire included a monthly calendar, which was used to record a history of the respondent's marriage status, fertility, contraceptive use including the source where the method was obtained, and the reason for discontinuation for each segment of use during each month of an approximately five-year period beginning in January 2000.

Pretest

A pretest was conducted during the preparation for the 2005 EDHS. After a two-week training course, the household and individual questionnaires were pretested in February 2005 in a small number of households. Four supervisors, four field editors, and 16 interviewers participated in the first pretest. The pretest was conducted in two Upper Egypt governorates (Giza and Fayoum) and two Lower Egypt governorates (Gharbia and Kalyubia). A sample of 304 households were selected: 76 households in each governorate. The data collection took about four days and a total of 268 household and 261 individual interviews were completed during the pretest.

The questionnaires for the 2005 EDHS were finalized after the pretest. Both comments from interviewers and tabulations of the pretest results were reviewed during the process of finalizing the questionnaires.

Data Collection

Data Collection Dates

Start	End	Cycle
2005-04	2005-06	N/A

Data Collection Mode

Face-to-face

DATA COLLECTION NOTES

Staff Recruitment

To recruit interviewers and field editors, a list was obtained from the then Ministry of Social Affairs (now the Ministry of Social Solidarity (MOSS)) of female personnel who were working to fulfill the one-year period of governmental public service that is mandatory for university graduates. All candidates nominated for the field staff positions were interviewed, and only those who were qualified were accepted into the training program.

All candidates for the interviewer and field editor positions were recent university graduates. Another basic qualification was a willingness to work in any of the governorates covered in the survey. With a few exceptions, interviewers who had previous experience in surveys were not accepted into the training program. This decision was made to reduce any bias that might result from previous survey experience and to ensure that all trainees had a similar background. However, previous survey experience was a basic qualification for the candidates for the positions of supervisor.

All of the staff recruited for the anemia testing were required to have a medical background. Some were assigned by the MOHP, and others were recruited from among newly graduated physicians.

Training Materials

A variety of materials were developed for use in training personnel involved in the fieldwork. A lengthy interviewer's manual, including general guidelines for conducting an interview as well as specific instructions for asking each of the questions in the EDHS questionnaires, was prepared and given to all field staff. In addition, a chart for converting months from the Islamic calendar to the Gregorian calendar was designed for the 60 months before the 2005 EDHS and distributed to all field staff along with a calendar of well-known worldwide or local events.

Other training materials, including special manuals describing the duties of the team supervisor and the rules for field editing, were prepared. Instructions for anthropometric data collection were included in a manual for the staff trained to collect height and weight data. A special manual covering the procedures to be followed in the anemia testing was also prepared.

Training for Supervisors and Interviewers

A special training program for supervisors was conducted during a one-day period prior to the main fieldwork training. This training focused specifically on the supervisor's duties, but it also covered the 2005 EDHS questionnaires in order to give supervisors a basic understanding of the content of the survey prior to the main training program.

Training for interviewers for the 2005 EDHS data collection began in mid-March 2005. Fourteen supervisors, 87 interviewers, and 36 anemia-testing and anthropometric-data-collection staff including 13 physicians and 2 nurses participated in the training program. This five-week training program, which was held in Cairo, included the following:
• Lectures related to basic interview techniques and to specific survey topics (e.g., fertility and family planning, maternal and child health, and female circumcision)
• Sessions on how to fill out the questionnaire, using visual aids
• Role playing and mock interviews
• Five days of field practice in areas not covered in the survey
• Four quizzes.

Trainees who failed to show interest in the survey, who did not attend the training program on a regular basis, or who failed the first two quizzes were terminated immediately.

Before the fourth field practice, a list was prepared of the 20 trainees who had performed best during both the classroom and field practices. Following the fourth field practice, 14 of these trainees were chosen to be field editors. A special training

session was held for the field editors after their selection. By the end of the training course, 69 of the 87 candidates originally recruited for interviewer training were selected to work as interviewers or field editors in the EDHS fieldwork.

Training for Anthropometric-data-collection and Anemia-testing Staff

Thirty-six personnel were selected for training in anthropometric data collection and anemia testing. The training included both classroom lectures and practice measurement and blood testing in a nursery school, in health facilities, and in households. At the end of the program, the 28 most-qualified trainees (14 males and 14 females) were selected for the anthropometric data collection and anemia testing. As discussed earlier, most of the personnel involved in the anemia testing had a medical background.

Fieldwork

Fieldwork for the 2005 EDHS began on April 21, 2005 and was completed in late June 2005. The field staff was divided into 14 teams; each team had 1 supervisor, 1 field editor, 3 to 4 interviewers, and 2 staff members assigned to height and weight measurement and anemia testing. All supervisors were males, while the field editors and interviewers were females. One male and one female staff member were involved in the anthropometric measurement and the anemia testing. During the fieldwork, the 14 field teams worked in separate governorates; the number of governorates assigned to an individual team varied from one to three, according to the sample size in the governorates. As a quality control measure, field editors regularly conducted reinterviews using a shortened version of the EDHS questionnaire. The results of the reinterview were compared to the responses in the original questionnaire and any mistakes were discussed with the interviewer. The teams also were closely supervised throughout the fieldwork by a fieldwork coordinator, two assistant fieldwork coordinators, and other senior staff.

As soon as the main data collection was completed in the first group of governorates, a random sample of up to 10 percent of the households was selected for reinterview as a quality control measure. Shorter versions of the 2005 EDHS questionnaires were prepared and used for the reinterviews. The visits to PSUs to conduct reinterviews also afforded an opportunity to make callbacks to complete interviews with households or individuals who were not available at the time of the original visit by the 2005 EDHS interviewers. Household or individual questionnaires in which there were significant errors that could not be corrected in the office were also assigned for callbacks. Special teams were organized to handle callbacks and reinterviews. During this phase of the survey, interviewers were not allowed to work in the governorate in which they had worked in the initial fieldwork. Callbacks and reinterviews began in mid-July 2005 and took about two weeks to complete.

Data Processing

Data Editing

Office Editing

Staff from the central office were responsible for collecting questionnaires from the teams as soon as interviewing in a cluster was completed. Office editors reviewed questionnaires for consistency and completeness, and a few questions (e.g., occupation) were coded in the office prior to data entry. To provide feedback for the field teams, the office editors were instructed to report any problems detected while editing the questionnaires, which were reviewed by the senior staff. If serious errors were found in one or more questionnaires from a cluster, the supervisor of the team working in that cluster was notified and advised of the steps to be taken to avoid these problems in the future.

Machine Entry and Editing

Machine entry and editing began while interviewing teams were still in the field. The data from the questionnaires were entered and edited on microcomputers using the Census and Survey Processing System (CSPro), a software package for entering, editing, tabulating, and disseminating data from censuses and surveys.

Fifteen data entry personnel used twelve microcomputers to process the 2005 EDHS survey data. During the machine entry, 100 percent of each segment was reentered for verification. The data processing staff completed the entry and editing of data by the end of July 2005.

Data Appraisal

Estimates of Sampling Error

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 2005 Egypt DHS 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 2005 EDHS 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.

If the sample of EDHS respondents had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the 2005 EDHS sample is the result of a multi-stage stratified design, and, consequently, it was necessary to use more complex formulae, specifically the Taylor linearization method of variance estimation, to calculate sampling errors for means or proportions from the survey. The Jacknife repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

Note: See detailed estimate of sampling error calculation in APPENDIX C of the report which is presented in this documentation.

Other forms of Data Appraisal

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

Note: See detailed tables in APPENDIX D of the report which is presented in this documentation.

Related Materials

Questionnaires

2005 Demographic and Health Survey - Questionnaire

Title	2005 Demographic and Health Survey - Questionnaire
Author(s)	Ministry of Health and Population (MOHP), Egypt National Population Council (NPC), Egypt ORC Macro, Calverton, Maryland USA
Date	2005-01-01
Country	Egypt
Language	English
Filename	Egypt_2005_DHS_questionnaire.pdf

Reports

2005 Demographic and Health Survey - Report

Title	2005 Demographic and Health Survey - Report
Author(s)	Fatma El-Zanaty and Ann Way and ORC Macro Calverton, Maryland, USA
Date	2006-03-01
Country	Egypt
Language	English
Description	This report summarizes the results of more than one year of continuous work preparing and carrying out different activities of the 2005 EDHS, including fieldwork, data processing, and analysis of the findings presented in this report.
Filename	http://www.dhsprogram.com/pubs/pdf/FR176/FR176.pdf

2005 Demographic and Health Survey - ERRATA

Title	2005 Demographic and Health Survey - ERRATA
Author(s)	Fatma El-Zanaty and Ann Way and ORC Macro Calverton, Maryland, USA
Date	2008-03-01
Country	Egypt
Language	English
Description	All changes are reflected in electronic version on the web site
Filename	http://www.dhsprogram.com/pubs/pdf/FR176/Egypt_IYCF_ERRATA_Word97_KM.pdf