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DEMOGRAPHIC AND HEALTH SURVEYS

The Demographic and Health Surveys (DHS) project is designed to produce accurate and timely information on population, health, and nutrition in developing countries. DHS surveys are national sample surveys that provide key data for planning, monitoring, and evaluating programs in these areas. DHS data also play a major role in furthering international understanding of global population and health trends. The surveys provide an unparalleled body of comparable data on demographic, health, and nutrition indicators and are a primary source of reproductive and health information for Africa, Asia, Latin America, and the Caribbean.

Program Inception

The DHS program started in 1984 as a follow-up to the World Fertility Survey and the earlier Contraceptive Prevalence Surveys. Through the end of 2002, 145 DHS surveys of reproductive-age women had been conducted in 68 countries. In addition, 74 surveys of men had been conducted in 44 countries. Most DHS surveys have a sample size of 4,000 to 8,000 women, but several have had substantially

larger samples. The 1998–1999 National Family Health Survey in India included interviews with 90,303 ever-married women.

Funding

The DHS program is funded by the United States Agency for International Development as part of the MEASURE Program, which is comprised of five related projects focusing on data collection, analysis, and dissemination. Additional funding for surveys in individual countries often is obtained from the United Nations Children's Fund (UNICEF), the United Nations Population Fund, the World Bank, the United Kingdom's Department for International Development, and other organizations. ORC Macro, based in Calverton, Maryland, provides technical and administrative support for the DHS program. Surveys are implemented by agencies in participating countries, under contract with ORC Macro.

The principal objectives of the DHS program are as follows:

- To improve the information base for policy development, economic and social planning, and the management of population and health programs;
- To promote the widespread dissemination and use of DHS data by policymakers and planners;
- To expand institutional capabilities in participating countries to collect and analyze survey data;
- To improve methodologies and procedures for conducting and analyzing demographic and health surveys.

The content of the surveys has varied over time, depending on emerging problems and the needs of data users, including participating governments, nongovernmental organizations, international agencies, and funding agencies. The surveys are based on a standard set of core questionnaires. Additional questionnaire modules on topics of interest, as well as country-specific questions, may be added to the core questionnaires in each country. This ensures that the questionnaires will be most relevant to the needs of each country while allowing for cross-country comparisons of findings on the core topics.

The current content of the core questionnaires covers topics such as fertility, fertility preferences, family planning, marriage, women's empowerment,

sexual activity, reproductive health, child health, environmental health, nutrition, AIDS and other sexually transmitted diseases, and socioeconomic conditions. The questionnaire modules on HIV/AIDS, maternal mortality, and female genital mutilation have been used the most frequently. In addition, some recent surveys include biomarker tests for anemia, HIV, syphilis, lead levels, cholesterol, vitamin A, and hepatitis B.

Findings

The vast array of findings from the DHS surveys have been detailed in hundreds of reports and research papers. Among their findings, DHS surveys have documented a decline in fertility in most parts of the developing world, high discontinuation rates for specific contraceptive methods in many countries, relatively high percentages of female-headed households in sub-Saharan Africa and the Caribbean, a strong preference for sons in many countries, the adverse effect of short intervals between births on the survival prospects of infants, and a substantial level of unmet need for family planning in most countries.

DHS surveys have also found high levels of anemia among children and women in India and the Central Asian republics, a high prevalence of chronic energy deficiency among women in sub-Saharan Africa, relatively high levels of obesity among women in the Middle East and North Africa, and a strong effect of poor feeding practices on the nutritional status of young children. Additional findings include substantial advances in public knowledge about AIDS and an increase in condom use during high-risk sexual encounters in AIDS-affected countries, the importance of the empowerment of women in promoting improvements in the health of both women and children, and inadequate vaccination coverage for vaccine-preventable diseases among young children in almost all the developing countries covered.

Advantages and Disadvantages

No single type of survey or data collection instrument can provide all the information necessary to inform policymaking decisions and monitor and evaluate population, health, and nutrition programs. However, the DHS surveys provide a rich and varied base of information in these areas. Some of the specific advantages of the DHS surveys are the following:

- Data are collected in a standard fashion to facilitate comparisons across countries and over time;
- DHS surveys produce generalizable data from nationally representative samples;
- The DHS program produces detailed manuals for interviewers, supervisors, household listers, and sampling statisticians to promote uniformity in procedures;
- DHS surveys incorporate extensive quality controls, including the production of field quality tables throughout the fieldwork and multiple levels of supervision and monitoring to detect and correct errors at an early stage;
- DHS data sets are made widely available over the Internet at no cost to the user;
- The collection of information on a wide variety of topics in a single survey allows in-depth study of the relationships among population, health, and nutrition variables;
- DHS surveys provide an important vehicle for the collection of biological specimens and the measurement of biological markers of health status in a cost-effective manner;
- Recent DHS data sets are geo-coded to allow linking of DHS data and other data in geographic information systems.

Among the limitations are the following:

- DHS samples are generally not large enough to provide estimates for small geographic areas, which often are needed for monitoring and evaluating decentralized programs;
- DHS surveys in a specific country are typically conducted every three to six years so that annual estimates of key indicators are not available from the surveys;
- Like any large-scale national sample survey, DHS surveys are fairly costly;
- DHS samples are not large enough to produce reliable estimates of the levels or trends of some relatively rare phenomena, such as maternal mortality.

More details about the Demographic and Health Surveys are available on the DHS website, which includes information about all DHS surveys, directions for obtaining data sets, and instructions for ordering or downloading DHS publications. In

addition, the website contains an online database tool, the STATcompiler, that allows users to build customized tables for hundreds of indicators based on DHS surveys in more than 60 countries.

See also: *Anthropometry; Data Assessment; Demographic Surveys, History and Methodology of; World Fertility Survey.*

INTERNET RESOURCE

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FRED ARNOLD

DEMOGRAPHIC SURVEILLANCE SYSTEMS

Collecting information on population dynamics in a defined geographic area is a practice that is as old as demography itself. Parish records and civil registers provided information that was used in the earliest attempts to characterize mortality and population dynamics. The earliest known calculations of mortality rates were based on civil registers for a segment of London.

Fertility models have been based on archival registers that are similar to contemporary surveillance systems. The first model life tables were based on population register mortality regimes.

In the twentieth century the role of population observatories expanded from description to investigation. Early studies focused on epidemiological questions (e.g., Goldberger et al. 1920). After World War II, controlled trials were used for the demographic evaluation of health experiments (e.g., Ferebee and Mount 1962) and research stations were created where vital registration in defined geographic areas was applied to estimate demographic characteristics and carry out an expanding range of epidemiological, social policy, and demographic studies. By the 1960s the health and population research role of those research stations and population laboratories was recognized as an area of scientific specialization within the field of demography. The term *demographic surveillance system* (DSS) came to be used to

connote the technologies associated with the continuous monitoring of births, deaths, and migration in a defined population over time.

Descriptive Demography and Health Interventions

At the beginning of the twenty-first century approximately 50 DSS health and population research centers were in operation around the world. Although some surveillance systems were established for the purpose of descriptive demography, the aim of most contemporary applications is to evaluate the impact of health interventions. Well-established demographic surveillance systems can provide concomitant support for multiple social, demographic, and economic investigations. Some are sites for pharmaceutical trials. In the year 2002, 28 DSS research centers were participants in the INDEPTH Network, an international organization that disseminates DSS information.

Survey Designs

The early era of population registration occurred in settings that were closed to migration. Such settings no longer exist. Surveillance systems in modern populations have to deal with migration. Establishing surveillance requires a baseline census to describe the initial population of a site by age and sex and selected other characteristics. Two contrasting strategies then are employed to update the baseline census data:

1. The *individual observation approach* records the timing and incidence of all births, deaths, and migration in and out of study areas so that the risk of events at the individual level can be defined precisely at any point in time. Migration is defined in terms of an individual's arrival at or departure from a surveillance observation unit such as the extended family, a nuclear household, or a dwelling unit over a specified period of time. Definitions of migration specify the length of time that must elapse before migration is registered as an event. Recording and managing such information represent most of the task load of individual observation systems. Most continuous demographic surveillance systems incorporate procedures for recording marital events, causes of death, and status in a household structure defined by headship or