KHYBER PAKHTUNKHWA INTEGRATED POPULATION HEALTH SURVEY (KP-IPHS) 2016-17

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ABSTRACT

OBJECTIVE: To conduct a population-wide representative survey to collect multi-dimensional information on the various aspects of individual, household, and population health in the Khyber Pakhtunkhwa (KP) province of Pakistan.

METHODS: A multi-stage stratified cluster sampling will be used in 24 districts of KP. Urban-areas will be divided into enumeration blocks based on the low-, middle- and high-income groups while rural-areas will be divided into mohallas/villages and these will be the primary sampling units (PSU's). Each enumeration-block/village/mohallas will comprise of 250-300 households (secondary sampling units). Line listing of the selected enumeration-blocks for urban and mohallas/villages for rural-areas will be done to select 12 household per urban enumeration-block and 16 households per rural PSU. The total sample size of the study will be 15,724 households (3756 urban areas & 11968 rural areas). Three sets of questionnaires will be used:

A household questionnaire (consisting of demographic, and socioeconomic characteristics of all household members)

A questionnaire for ever-married women aged 15-49 years (consisting of infant and maternal mortality, maternal and newborn health, contraception, child vaccination, and nutrition)

A health questionnaire for adults aged ≥18 years (consisting of anthropometry, communicable and non-communicable diseases, stroke, disability, health-related quality of life, physical activity, dietary recall, tobacco use, environmental health, and medicine used).

Ethical approval will be taken from the ethical committee of the Khyber Medical University, Peshawar. The data will be analysed in STATA version-14.

DISCUSSION: The outcomes of the survey could be used as an evidence to bring reforms in the health and population welfare policies.

KEYWORDS: Demography (MeSH); Pakistan (MeSH); Population (MeSH); Health Surveys (MeSH); Khyber Pakhtunkhwa (Non-MeSH); Socioeconomic Factors (MeSH); KP-IPHS 2016-17 (Non-MeSH); Stroke (MeSH); Noncommunicable Diseases (MeSH).

INTRODUCTION

Public health practice is dependent on valid, reliable, concurrent, and high quality data for various situational analyses, without which there can be no measurement of progress, evaluation of effectiveness of interventions and programs or any systems improvement in implementation.[1,2] Traditionally, data sources for public health practice and management include census, vital statistics, disease registries, surveillance systems, surveys, epidemic investigations, research studies, and program evaluations.[3]

Because of the evolving nature of systems infrastructure in Pakistan, like the rest of the developing world, few of these sources would provide consistently reliable information about populations in various locales. Our main source of health information is collation of data from lower healthcare delivery hierarchy at District Health Information System (DHIS).[4] This data is healthcare facility based and may not provide a robust substitute for the relatively more generalizable information gathered through a representative survey. Such surveys play a pivotal role in public health planning and assessment,[5] as well as in design and deployment of systems ensuring equity in healthcare delivery.[6]

Census has been defined as "the procedure of systematically acquiring and recording information about the members of a given population; it is a regularly occurring and official count of a particular population".[7] Although the history of census dates back to Babylonians (ca. 3800 years BCE) and Egyptians (ca. 3340 BCE),[8] the rudimentary origins of modern

TABLE I: DESCRIPTION OF THE TOOLS USED IN THE SURVEY

Tool Used	Description of the Tool
General Health Questionnaire (GHQ)[17]	GHQ is basically a measure of existing mental health status. It was developed in the 1970s by Goldberg. Since its development it is widely used in a number of different cultures and settings. The originally or initially developed GHQ questionnaire comprised of a 60-item instrument but currently a range of simplified versions of the questionnaire are available which includes: GHQ-30, GHQ-28, GHQ-20 and GHQ-12. There is a scale on the questionnaire which asks about the respondent that whether he/she has experienced a specific behavior or symptom recently. Each item is rated on a four-point scale which includes: "less than usual, no more than usual, rather more than usual, or much more than usual"
World Health Organization Quality of Life[18] (WHOQOL-BREF)	It is a 26-item, having some salient features which include: self-administration, psychometrical, cross-cultural and developed in developing and developed countries comprises of 23 different centres. This tool has been well validated specifically in Asian samples. It is widely available in 19 different languages and is focusing on subjective assessment of an individual's perceived QOL in the past 2 weeks in four domains: "physical health, psychological, social relationships and environment". It also comprises of an additional two items which can be used for the assessment of the overall general health and QOL of an individual.
Short Form Health Survey[19] (SF-12)	It is a short form survey with 12 questions which are multipurpose. These 12 questions are all selected from the long form of the same questionnaire called SF-36 Health Survey. The scores from each of the respondent are combined and weighted in order to create two scales which gives glimpses of physical, mental and overall health related quality of life of an individual. This questionnaire is basically a measure of generic type which can be use for people of all age groups and any community.
Agha Khan University Anxiety and Depression Scale[20]	It is an indigenous screening instrument which has been developed for anxiety and depression syndromes at the Aga Khan University, Karachi. It is a 25 items questionnaire which comprises of 12 somatic and 13 psychological questions. It has a sensitivity of 66% and a specificity of 79% at a score of 20. In contrast with the other available instruments specially in Urdu, they comprise of either psychological or somatic items, this depression and anxiety scale includes both and it increases the reliability of this questionnaire for use as a screening instrument in primary health care setting and also in epidemiologic work in Pakistan and in other psychiatric research
Cincinnati Stroke Scale[21]	We used Cincinnati Stroke Scale for identification of stroke patients in community. This simple scale, which can be administered in a few minutes and comprising of three item (facial palsy, motor limb weakness, and speech deficits)

population census can be traced back to the seventeenth century, in Quebec and Nova Scotia, then colonized by France, where 16 enumerations were made between 1665 and 1754 while in 1695, Great Britain, excepting the Domes day Book manuscript prepared for William the Conqueror in 1086. In relatively more recent times, among the earlier efforts at population-wide enumeration are that of Canada in 1871, India in 1871–72, and Egypt in 1897.[9]

Wherever government initiatives regarding population level data collection and dissemination lose the vital thrust of political will, public health institutions and practitioners have to rely on local endeavors for their information needs, which, in the absence of representative data, would not have any benchmark to measure validity and accuracy.[10]

Khyber Pakhtunkhwa (KP) is the second lowest on Human Development Index (0.61), after Baluchistan (0.60), among the provinces of Pakistan.[11] With an estimated population of 35.52 million,[12] KP has an estimated Maternal Mortality Ratio of 206 per 100,000 live births,[13] and Neonatal, Post-neonatal, Infant, Child, and Under-five Mortality Rates estimated at 41, 17, 58, 13, and 70 per 1000 live births respectively.[14] Security situation in KP has been rather precarious for more than a decade now, and critical terrorist threat still dominates the overall security environment.[15] Lack of appropriate infrastructure, dearth of basic human needs and existential uncertainties can logically be construed to breed radical behaviors.[16]

In order to ensure comprehensiveness of data, such information system will have to be multifaceted and multidimensional yet brief enough to facilitate fieldwork for the existing workforce. Therefore the KP Integrated Population Health Survey (KPIPHS) has planned to provide high-quality data on demographic attributes, socio-economic/cultural aspects relating to persons and families, fertility levels/preferences, contraceptive use, physical and psychological health, nutrition, lifestyles, preventive and curative health services utilization, environmental health, water and sanitation, maternal and child health, immunization, common diseases and investigate factors associated with these conditions in the whole province. The information will help health and family planning programs for evidence-based planning and offer guidelines to program managers and policymakers to effectively plan and implement future interventions.

METHODS

Survey Organization:

The Department of Population Welfare KP is the executing agency with support of the department of Health KP. Prof Zia Ul Haq from the Institute of Public Health & Social Sciences of Khyber Medical University (KMU) is the primary investigator. The Bureau of Statistics at the Planning & Development department, KP is providing assistance in the selection of sampling points, maps and household listings. UNFPA is providing technical and
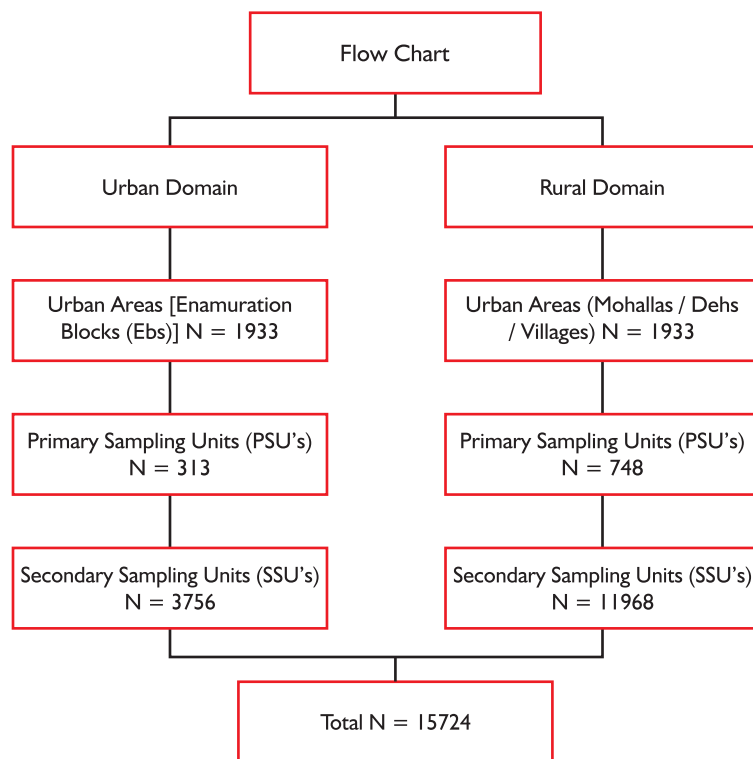
FIGURE I: KHYBER PAKHTUNKHWA INTEGRATED POPULATION HEALTH SURVEY SAMPLING FLOW CHART

12th household per urban PSU will be selected for data collection and these will be the secondary sampling units (SSU's). A total of 3756 households will be selected from the urban areas of the seven districts and 11968 households will be selected from the rural areas of these 24 districts. The total sample size of the study will be 15724 households (Figure I).

Measures:

1. Demographic data
2. Quality of life
3. Mental health
4. Physical activity
5. Co-morbid conditions
6. Reproductive health
7. Child health
8. Body Mass Index
9. Waist to Hip ratio

Comprehensive and standard model questionnaires will be used for data collection; these questionnaires have been customized according to the needs and situation of the province.

Three sets of questionnaires will be used:

1. The household questionnaire

2. Questionnaire for ever-married women aged 15-49 years and the situation of children under the age of five addressed to the mother or primary caretaker of the child.

3. Health questionnaire from adult aged 18 years and above: including Demographic Health Survey Program, General Health Questionnaire, Short Form Health Survey (SF-12), International Physical Activity Questionnaire, World Health Organization (WHO) Quality of Life, Multiple Indicators Cluster Survey, Food Frequency Questionnaire, United Nations Children's Fund (UNICEF) Multiple Indicator Cluster Survey, Agha Khan University Anxiety and Depression Scale and Cincinnati Stroke Scale (Table I).[17-21]

Fieldwork and Trainings:

Human resource for data collection will be around 30-40 field workers of the population welfare department of KP per district, monitoring teams will include demographers of each district i.e. 24 in number. At the beginning demographers

financial support.

Study Design and Population:

This cross-sectional survey will be conducted in 24 districts of KP, Pakistan and will includes both male and female adult population aging 18 years and above, For maternal and child health survey component, women of reproductive age group (15 to 49 years) will be selected for interview. The survey duration will be from 2016 and 2017.

Survey Indicators:

The indicators will include; under-five, infant and neonatal mortality rates, breastfeeding practices, reproductive health, contraceptive prevalence, fertility rate, antenatal and postnatal care, vitamin A supplementation (under-five), child immunization, family welfare centers (FWC) or LHW visits, sanitation facilities, sources of drinking water and sanitary means of excreta, disposal of water and solid waste, hand washing before and after toilet use, child protection, access to basic education and health facility, literacy and education, labour participation, child labour, socioeconomic status, multiple morbidity, body mass index (BMI), waist to hip ratio, mental health and psychological well-being, health-related quality of life, physical activity, disability, stroke, hepatitis, thalassemia, smoking, diet, happiness and environmental health.

Sampling Technique:

It is a multi-staged stratified cluster sampling for the selection of the sample size. Sampling will be carried out from all 24 districts with strata from rural/urban and low-, middle- and high-income groups. Urban areas will be divided into enumeration blocks on the low-, middle- and high-income groups while rural areas will be divided into mohalla/villages and these will be the primary sampling units (PSU's). Each PSU will comprises of 250-300 households.

Each of the PSU and these will be visited to enlist all the households. Listing of the selected enumeration blocks for urban and mohallas/villages for rural areas is carried out. Through systematic random sampling technique, every 16th household will be selected per rural PSU and every

from all the districts are being called for two days orientation and feedback training on the survey tools. Training includes a briefing about the sample selection and household's line listing procedure, by a consultant from the bureau of statistics already involved in the Multiple Indicator Cluster Survey (MICS) of 2007 and 2016.

Training of the field workers on the tools and overall process of data collection at the district level will be provided through a trained team, mainly the faculty and researchers of KMU under the principal investigator district. Separate training programs will be arranged for demographers from each district on data entry process by using Epi info (statistical program). Demographer (PWD Officer) of each concerned district will be responsible for supervision and data monitoring by scheduling random visits at the data collection point.

Data Analysis Plan:

The final data entry and compilation will be the responsibility of KMU team. Special database will be designed in the Microsoft Epi Info for data entry. After completion of the data entry process, the data will be crosschecked with the hard forms, in order to get the most authentic data for analysis. The cleaned data will be transferred into STATA version 14 for analysis. Hardcopy of the tools will be stored with proper cataloguing and the soft data will be saved in the principle investigator official computer following the data security and handling SOP s.

Ethical Aspect:

The survey received ethical approval from the ethical committee of KMU. Informed written consent will be obtained from each participant after explanation of the survey objectives and methodology. The right to withdrawal from the study will be reinforced to all participants during informed consent and throughout survey conduct. Data confidentiality will be assured, with all data accessible by the study lead only.

DISCUSSION

The KPIPHS has been developed to collect a minimal set of necessary information on demographic attributes, socio-economic and cultural aspects relating to persons and families, physical and psychological health, nutrition,

lifestyles, preventive and curative health services utilization, environmental health, water, and sanitation, maternal and child health, and assessment of awareness about common locale-specific health issues.

This aspect of socio-cultural milieu of KP makes it imperative for the public health management to create self-sustaining, long term, integrated system components aimed at robust, accurate, ongoing data collection and analysis with the potential to facilitate the necessary services and support for relatively isolated and marginalized social groups. In view of the uncertain prospects of regular representative health surveys, such information systems in KP will have to be developed utilizing the existing public health resources efficiently. This is the first ever large-scale representative survey being conducted by any province using its own resources. The survey is an excellent example of coordination between the different public sector departments and it will create the first profile of health and population for KP province.

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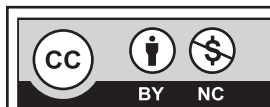9. The Editors Encyclopedia Britannica. Census. Encyclopedia Britannica

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