

# Chapter 2

## The 2018 Longitudinal Study of Ageing and Health in the Philippines

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## The 2018 Longitudinal Study of Ageing and Health in the Philippines

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The 2018 Longitudinal Study of Ageing and Health in the Philippines (LSAHP) is the first nationally representative longitudinal study on ageing in the Philippines. It is designed to (1) investigate the health status and well-being of older Filipinos and its possible correlates, and (2) assess the determinants of health status and transitions in health status and overall well-being.

The LSAHP is preceded by two nationally representative studies on older Filipinos: the 1996 Philippine Elderly Survey and the 2007 Philippine Study on Aging (see Cruz, Natividad, Gonzales, and Saito [2016]), making the 2018 baseline data the third nationally representative sample of older persons (OPs) in the country in the past 2 decades. The data generated from the LSAHP and the previous datasets will provide a wealth of information that will allow for a deeper understanding of ageing in the country. The LSAHP offers information on emerging issues and measures in ageing research not covered in previous studies of OPs in the country, such as generativity, social isolation, cognitive assessment tests (i.e. the Short Portable Mental State Questionnaire [SPMSQ]), the Washington Group Short Set on Functioning, and the Global Activity Limitation Indicator. The survey's data on performance indicators and other physiological data will allow for an interdisciplinary approach to the analysis of ageing, health, and well-being. The longitudinal data will provide a basis for assessing the risk factors related to old-age morbidity, mortality, timing of onset of diseases, and functional disability, particularly as they relate to socioeconomic and demographic factors, access to health services, pension, leisure, and other factors. The study will shed light on related issues affecting the well-being of OPs, such as the intergenerational flow of wealth and support, use of information technology, and availability and nature of caregiver support. This information will serve as scientific

evidence that will be useful for policymakers, health professionals, organisations providing services for OPs, and those working in gerontology and geriatrics.

The LSAHP is part of a comparative study of the Philippines and Viet Nam, two countries in the Association of Southeast Asian Nations (ASEAN) with no existing longitudinal data despite their emerging ageing populations. The study is funded by the Economic Research Institute for ASEAN and East Asia, with the Demographic Research and Development Foundation, Inc.<sup>1</sup> as the implementing agency in the Philippines.

## Conceptual Framework

The World Health Organization (WHO) defines health as a multifaceted concept that includes physical, mental, and social aspects (WHO, 2006). Accordingly, we define healthy ageing not just as the absence of disease but also, more importantly, as the maintenance of functional ability. Consistent with the multifaceted definition of health, the study adopts the disablement process model as its conceptual framework (Figure 2.1). The model describes the pathways leading from health to the end of life (Crimmins and Seeman, 2001; Saito, Robine, and Crimmins, 2014; Verbrugge and Jette, 1994). The disablement process describes how chronic and acute conditions affect functioning in specific body systems, fundamental physical and mental actions, and activities of daily life (Verbrugge and Jette, 1994). The model goes beyond the old, traditional mortality and morbidity measures and widens the definition of health outcomes to encompass the concepts of impairment, functional limitation, and disability – what Verbrugge and Jette termed nonmortal outcomes. The proliferation of outcomes is related to the improved understanding of the multidimensional aspects of health outcomes and of the mechanisms through which health is affected (Verbrugge and Jette, 1994). Other health domains such as mental health and cognitive functioning are considered in many regular demographic studies (Colsher and Wallace, 1991; Herzog and Wallace, 1997).

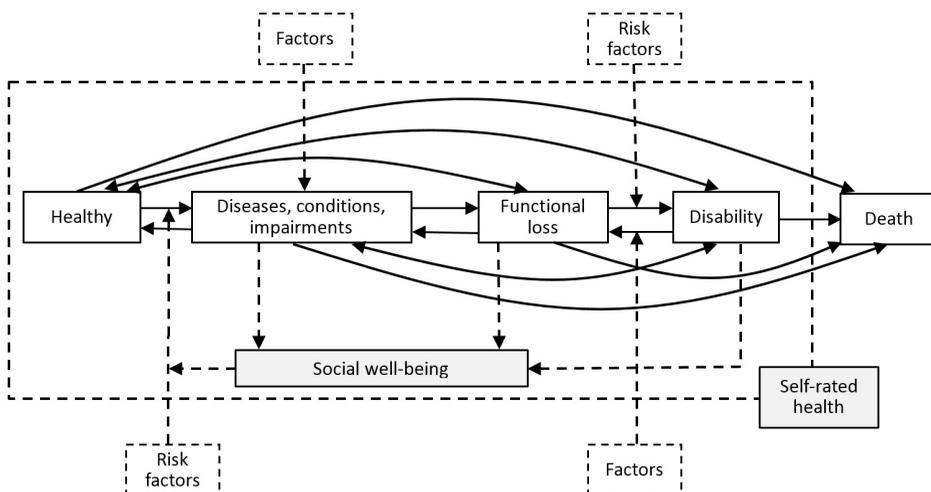
Figure 2.1 outlines the five dimensions of the disablement process: (1) healthy; (2) diseases, conditions, and impairment; (3) functional loss; (4) disability; and (5) death. ‘Death’ represents what is traditionally used as an indicator of population

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<sup>1</sup>The foundation is a nonprofit, non-stock private organisation that aims to promote and undertake research, training, and other related activities in population and development.

health: mortality or life expectancy. This is computed based on age-specific mortality rates. Information on death amongst the sample will be available only after the second wave of the longitudinal survey. ‘Diseases, conditions, and impairment’ are commonly regarded as ill health or an unhealthy state. The WHO (2001) defines impairment as the loss of physiological integrity in a body function or anatomical integrity in a body structure, caused by disease, injury, or congenital defect. In the survey questionnaire, we asked about a set of chronic diseases and conditions, pain, falls, depression, and cognitive impairment as measures of diseases, conditions, and impairment. ‘Disability’ is not merely physiological impairment and loss of functioning but also includes the individual’s ability to interact with others and with his or her environment, as defined in the social-relational model and the biopsychosocial model (Washington Group on Disability Statistics, 2017). In the study, disability is operationalised by the following measures: activities of daily living (ADLs), instrumental ADLs, the Washington Group Short Set of Questions on Disability, and the General Activity Limitation Indicator. ‘Functional loss or limitations’ refers to restrictions in performing fundamental physical and mental actions used in daily life by one’s age–sex group that indicate the overall abilities of the body and mind to do purposeful work (Verbrugge and Jette, 1994). In the study, functional loss is captured by Nagi measures.

**Figure 2.1. Conceptual Model of Health States and Health Transitions According to the Disablement Process**



Source: Saito, Robine, and Crimmins (2014).

Respondents were asked a question on self-rated health as a global health measure and about other social aspects of health such as loneliness and happiness. These health states and questions will be employed to describe the health status of older Filipinos.

The International Classification of Functioning, Disability and Health, the WHO framework for health and disability, recognises that the progression from impairment to functional limitation to disability is not always stepwise. Thus, in the process of becoming disabled, the model allows for recovery from disability and transition back to a less disabled or healthier state. This nonlinear progression in the disablement process is indicated by arrows connecting the boxes in Figure 2.1.

Using the longitudinal survey data, we will be able to examine another aspect of health: health transitions. Each box in Figure 2.1 represents prevalence and each arrow represents transition or incidence. There are two sources of change in prevalence. For instance, the prevalence of disability may increase through declining mortality from disability outflow even though the transition to disability inflow stays constant. The prevalence of disability, however, could stay constant because declining mortality from disability is compensated by the declining health transition to disability. We need to pay attention not only to the prevalence for each box but also to health transitions.

To understand the current health status or health transitions, we need to identify the determinants of being in a certain health state, or the factors and risk factors of health transitions amongst health states. The factors that speed up or slow down the pathway (Verbrugge and Jette, 1994) are the social, psychological, and environmental factors that influence or modify the process of becoming disabled (Peek, Ottenbacher, Markides, and Ostir, 2003). This is shown in the second conceptual framework (Figure 2.2), which outlines the factors affecting health outcomes. 'Health outcome' refers to the same health outcomes in Figure 2.1. The boxes on the left side of 'health outcome' are the potential determinants of health outcomes. Each arrow in Figure 2.2 suggests the direction of the effect between sets of factors in general. Each box shows the topics included in the survey.

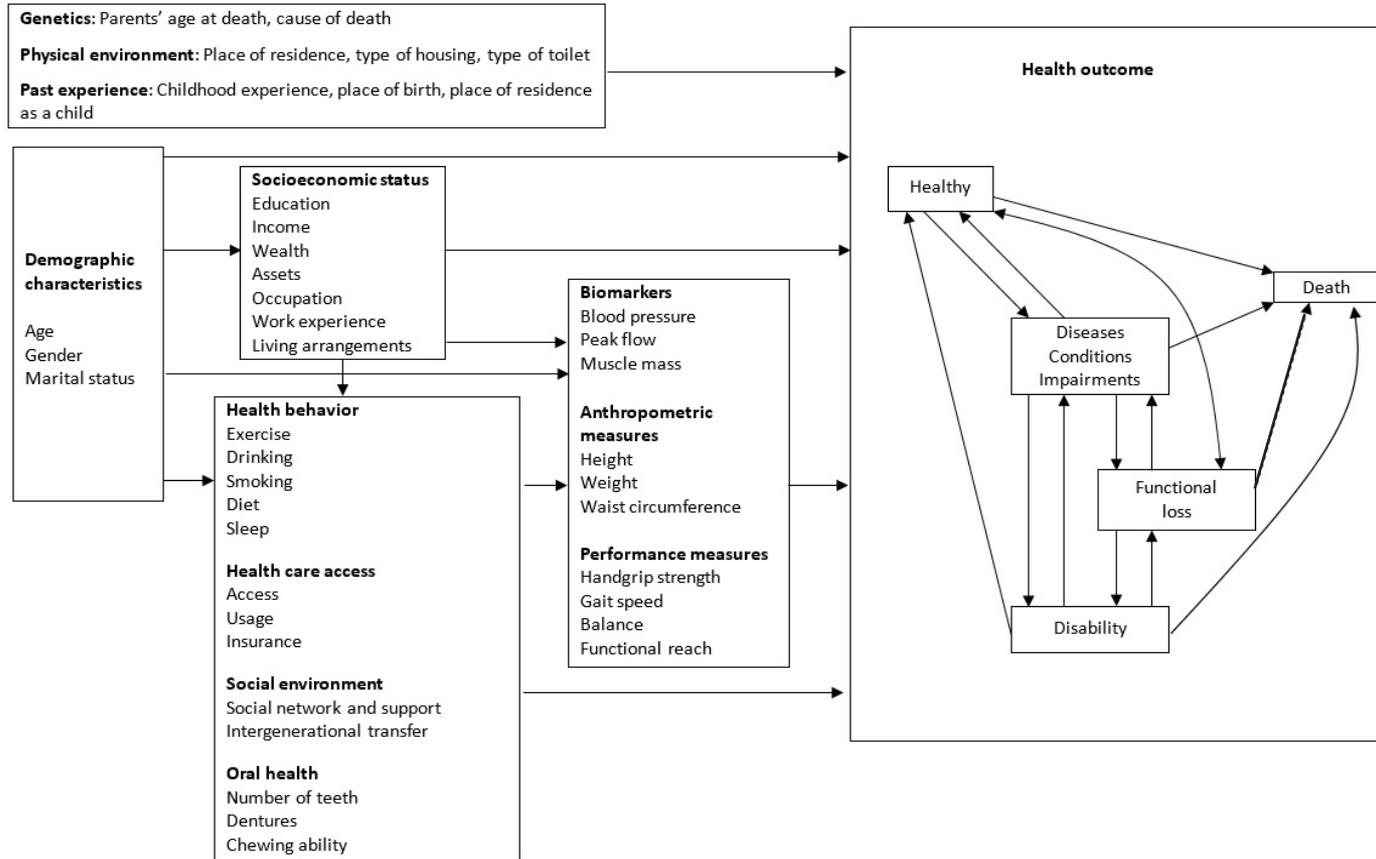
Demographic characteristics such as age, sex, and marital status have a direct effect on health status and overall well-being. The same is true for the OP's background of childhood experiences (type of community where the respondent grew up); parental characteristics (whether parents are alive, age at death, cause of death, and educational attainment); and the physical environment (place of residence and type of living conditions). Socioeconomic status has a direct effect on health outcomes, but it is also conceived as being affected by age, gender, and marital status. Other groups of factors conceived to have an effect on health status are health behaviours, healthcare access, oral health, and social network. These, in turn, are affected by demographic and socioeconomic factors. Biological risk factors such as blood pressure, body mass index, and grip strength also have a direct effect on health status and are, in turn, affected by sociodemographic and other health behaviours.

## Study Design

The LSAHP is a longitudinal, nationally representative study of older Filipinos aged 60 and over living in community dwellings. The baseline survey was conducted in 2018, with the follow-up interview to be conducted 2 years after the baseline study. For respondents who die during the interim period, verbal autopsy data will be collected in the follow-up interview as the basis for estimating mortality rates and their determinants. The baseline survey oversampled those aged 70 to 79 with a factor of 2 and oversampled those aged 80 and above with a factor of 3 to ensure that there would be enough sample respondents in the older age group in the follow-up surveys. Face-to-face computer-assisted personal interviews were conducted for the survey using tablets.

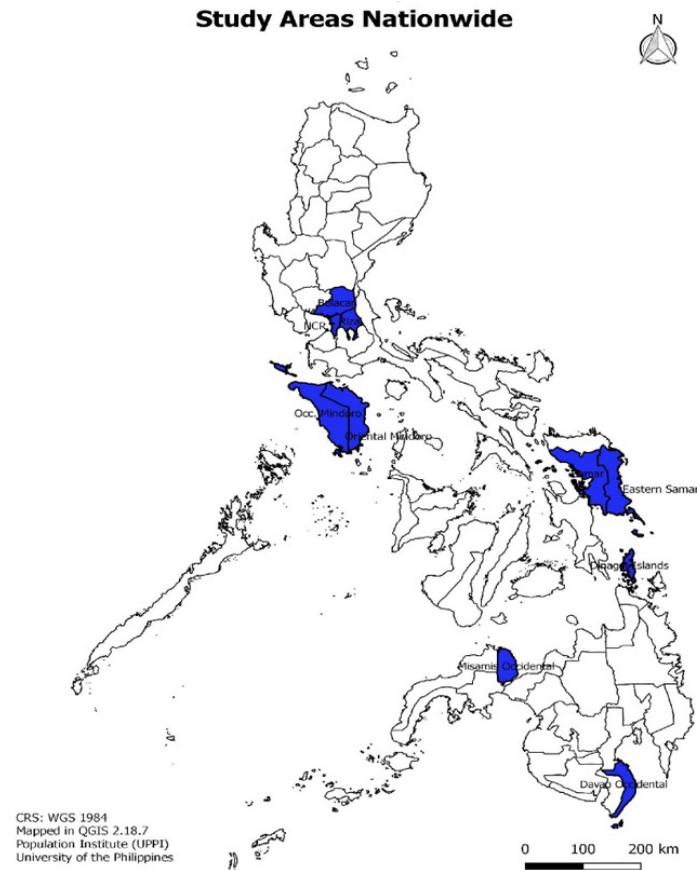
The LSAHP baseline data collection employed a multistage sampling design with provinces as the primary sampling units, barangays (villages) as the secondary sampling units, and OPs as the ultimate sampling units. Based on the latest census, in 2015, the provinces were stratified according to the estimated number of the population aged 60 and over in 2018. The study covered 167 barangays in two cities in Metro Manila (Pasig and Muntinlupa) and nine sample provinces (Rizal, Bulacan, Occidental Mindoro, Oriental Mindoro, Samar [Western Samar], Eastern Samar, Dinagat Islands, Misamis Occidental, and Davao Occidental) selected using stratified sampling. (See Figure 2.3 for a map of the LSAHP study areas and Annex A for a fuller discussion of the sampling design.)

Figure 2.2. Conceptual Framework for Factors Related to Health Outcome



Source: Saito (2018).

**Figure 2.3. Map of the 2018 Longitudinal Study of Ageing and Health in the Philippines Sample Area**



Cartography: Armand N. Camhol.

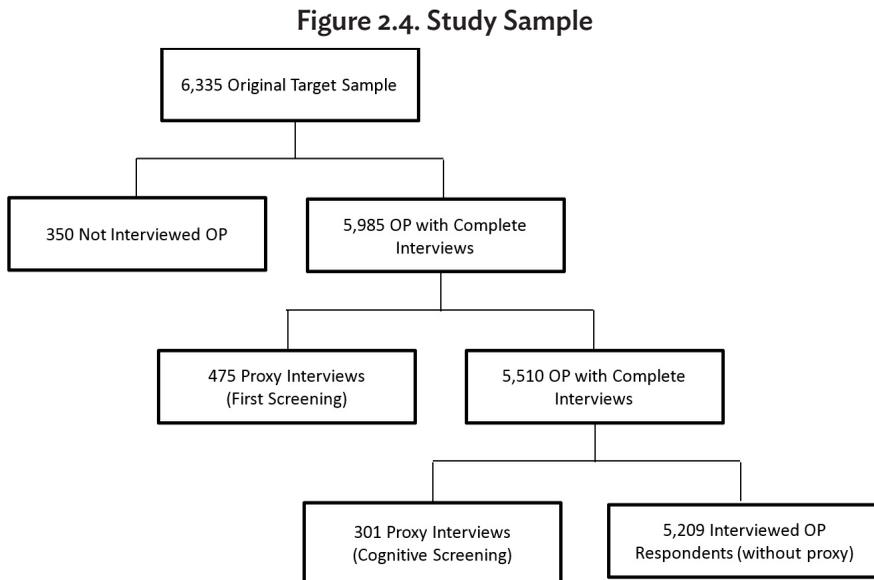
Source: Population Institute, University of the Philippines.

The LSAHP was designed to provide multilevel and multi-actor data. Baseline information was drawn from the OP's household, the OP respondents, the OP's primary caregiver or potential caregiver (if the OP did not have a caregiver at the time of the study), and one of the OP's adult children. The respondents of the household questionnaire were any responsible adult member of the household, preferably the household head. The child and caregiver respondents were restricted to those at least 18 years old at the time of the interview. Data from the OPs' children and caregivers were considered to allow for cross-validation of some information collected from the OP respondents, particularly on their health, caregiving, and intergenerational support.

## Study Sample

The LSAPH baseline data were collected from October 2018 to February 2019. From a target sample of 6,335 OPs aged 60 and over, a total of 5,985 were interviewed – a response rate of 94%. The remaining 350 OPs either refused to participate or were not available for interview despite repeated visits (Figure 2.4). The 5,985 who were eligible for interview were assessed for fitness to be interviewed. Based on this initial assessment, 5,510 OPs were eligible for interview. The remaining 475 OPs were not eligible for interview and required proxy for any of the following reasons: (1) OP was hospitalised, sick, or incapacitated; (2) OP had difficulty hearing; (3) OP had difficulty speaking; and (4) OP had poor cognitive or psychological condition (e.g. memory loss, confusion, amongst others). The 5,510 OPs eligible for interview were further subjected to a cognitive test to determine their ability to answer the questionnaire. We used the SPMSQ for cognitive screening. Since the test has not yet been validated in the Philippines, we adopted the standard cut-off scores recommended by Pfeiffer (1975). The OP respondent's highest educational attainment was considered in determining the cut-off score. This is the first time a Philippine ageing study used a cognitive assessment test to determine the OP's eligibility and fitness to answer the questions. A total of 5,209 OPs scored above the cut-off and were thus eligible to proceed with the interview. The 301 who scored below the cut-off in the cognitive test were unable to proceed with the interview but were allowed a proxy to answer factual questions (see Annex B for a detailed discussion of the proxy interviews).

The household characteristics of all the 5,985 eligible respondents were collected using the Household Questionnaire. Anthropometric data were collected from 5,731 respondents (96% of the total respondents). Excluded from the anthropometric measurements were those who were bedridden, disabled, or sick, and unable to perform the required measurements (Table 2.1). Data on body mass and inner body scans using the Tanita Segmental Body Composition Monitor were collected from 4,022 respondents (70% of the total respondents with anthropometric data). A total of 5,143 caregivers and 3,573 children of OPs responded to the questionnaires. Children who were caregivers of the OP respondent were interviewed using the caregiver questionnaire and not the child questionnaire, explaining the higher yield of the former relative to the latter.



Source: Calculated by DRDF using original LSAHP data.

**Table 2.1. Number of Respondents Per Questionnaire**

Questionnaire	Number of Respondents
Household	5,985
Main	5,985
Adult child	3,573
Caregiver	5,143
Anthropometric	5,731
With Tanita measures	4,022
Without Tanita measures	1,709

Source: Calculated by DRDF using original LSAHP data.

## Longitudinal Study of Ageing and Health in the Philippines Questions

Five questionnaires were developed for the baseline data collection:

- (1) Household questionnaire
- (2) Main questionnaire for the OP respondent
- (3) Anthropometric questionnaire for OP
- (4) Caregiver Questionnaire
- (5) Adult Child Questionnaire

The following section briefly describes the five questionnaires and the topics they covered:

(1) **Household questionnaire.** This questionnaire provides detailed demographic and economic information on household members, overseas employment, housing characteristics, tenure status, household assets, access to clean water and sanitation, whether the household is a recipient of the Conditional Cash Transfer Program of the government, and the children of the OP respondent.

2) **Main questionnaire for the OP Respondent.** The questionnaire mainly covers the health outcome measures mentioned in Figure 2.1, the determinants of health outcomes mentioned in Figure 2.2, and other measures of well-being. The questionnaire provides a significant amount of health information that will enable the examination of various dimensions of the OPs' health, including self-assessed health; illnesses; functional ability (ADL, instrumental ADL, and Nagi); mental health (Center for Epidemiological Studies-Depression Scale) and cognition; incontinence; personal habits such as smoking and drinking; and health utilisation.

The following are the major blocks of information collected from the main questionnaire:

- Socioeconomic and demographic characteristics
- Health status
- Physical ability and disability
- Mental health
- Health utilisation
- Income and assets
- Attitudes and beliefs
- Activities, social isolation, and information technology
- Services for the elderly
- Children and grandchildren
- Cognitive assessment

(3) **Anthropometric Questionnaire for OP.** This questionnaire collected data on the following measures: biomarkers (blood pressure and peak flow); anthropometric measures (height and weight); and performance measures (handgrip strength, gait speed, balance, and functional reach). Using the Tanita Segmental Body Composition

Monitor, we gathered the following information: body weight, body mass index, body fat percentage, total body water percentage, muscle mass, physique rating, bone mass, basal metabolic rate, daily calorie intake, metabolic age, and visceral fat. This information will be useful for exploring an interdisciplinary assessment of health outcomes by integrating biomarkers and other physiological indicators in the demographic analysis of health outcomes.

4) **Caregiver questionnaire.** We developed a short questionnaire for main or potential caregivers based on a caregiver–older adult dyad survey conducted in Singapore. The primary caregiver interview aims to provide needed information on the prevalence and nature of caregiving for OPs in the country. The questionnaire covers the following topics: relationship of the caregiver to the care recipient, preparations for caregiving roles, caregiving activities, number of hours allotted for caregiving work, the well-being of caregivers, and the support network and intervention programmes for caregivers of OPs. The questionnaire also provides information on the caregiver’s assessment of the OP respondent’s difficulty in performing ADLs, which can be used to cross-validate the OP’s self-assessment of these health indicators.

5) **Adult Child questionnaire.** This questionnaire is based on a parent–child dyad survey in Taiwan, which is part of a longitudinal study for older adults and on a three-generation survey conducted in the United States. Based on these questionnaires, we developed a short questionnaire to examine the relationship between the adult child and older parent. One adult child per OP respondent was interviewed. The data on parent–child dyads from interviews of the OPs and their children will allow a more nuanced exploration of the nature of intergenerational relationships, support provision, and expectations regarding filial piety.

The caregiver and adult child interviews also aim to provide more information on the potential consequences of changes in the OP’s health status. The interviews aim to shed light on how the family is mobilised to provide support and services for their elder members. The questionnaires gathered data on the caregiver’s and adult child’s basic sociodemographic characteristics and their perception of the OP’s health status. Both caregiver and child interviews also provided additional contact information of the OP respondent to ensure an increased chance of response in the follow-up study 2 years after the baseline data collection.

All questionnaires were pretested, taking into account the age, sex, and urban–rural distribution of the OPs. The questionnaires were translated into three local languages – Filipino, Waray, and Cebuano – and back translated. The questionnaire content was also presented to the LSAHP Advisory Committee, composed of representatives from the academe, government agencies involved in ageing affairs, international development agencies, and nongovernment agencies. The Department of Health endorsed the study and included some rider questions to help assess some of their ongoing programmes for OPs. The Philippine Society of Geriatrics and Gerontology also provided help in translating the cognitive assessment test questions (SPMSQ).

### Training of Field Personnel

The LSAHP core team conducted a total of five training sessions for field supervisors and field interviewers: two in Quezon City, one in Tacloban City, one in Cagayan de Oro City, and one in Davao City. The training covered a review of the duties and responsibilities of field personnel, clarification of the concepts and questions used in the five questionnaires, an explanation of how to conduct the performance tests and measures in the anthropometric questionnaire, mock interviews using the paper and computer-assisted personal interview versions of the questionnaires, and actual field practice. A field manual was developed, printed, and distributed to all field personnel during the training. All field interviewers also received copies of the five questionnaires and other field materials (e.g. consent forms).

### Fieldwork

The survey data were collected from 22 October 2018 to 22 February 2019 by 11 field teams. Each team consisted of a field supervisor and five field interviewers. The central office staff monitored the fieldwork by visiting the field areas and communicating regularly with the field supervisors.

### Data Processing

CSEntry for Android, a free data entry software programme developed by the United States Census Bureau, was used for data collection. The processing of the 2018 LSAHP data began almost as soon as the fieldwork started. The electronic data

files were regularly synchronised within the team via Bluetooth®. Field supervisors synchronised the electronic data to a Dropbox cloud server. These data files were regularly downloaded by the central team to monitor the data collection and check for their completeness. Any errors and inconsistencies in the data were immediately communicated to the field teams whilst they were still in the field area.

Secondary data editing started even before the data collection was completed. It involved resolving inconsistencies, coding open-ended questions, and verifying the Philippine Standard Occupational Classification. Batch data editing was carried out using the CPro Batch Edit tool and IBM-SPSS.

In this report, the numbers in the tables are weighted numbers. Total N of cases may not add up due to weighting.

## Ethical Clearance

As part of the requirements for the conduct of the study and to ensure that the researchers adhere to ethical standards, an ethics review clearance was sought from the University of the Philippines Manila Research Ethics Board Review Panel 2. Data gathering began after the ethics review clearance was issued on 19 October 2019. Consistent with the provisions of the ethics clearance, the field personnel secured the consent of the OPs, caregivers, adult children, and household respondents prior to the interview.

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