

Nepal - World Health Survey Plus Nepal 2023

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Identification

SURVEY ID NUMBER

DDI-NPL-WHO-WHSPLUS-2023-V01

TITLE

World Health Survey Plus Nepal 2023

SUBTITLE

Wave 1

ABBREVIATION OR ACRONYM

WHS+ NPL 2023

COUNTRY

Name	Country code
Nepal	NPL

STUDY TYPE

World Health Survey [hh/whs]

SERIES INFORMATION

The World Health Survey Plus (WHS+) is the first wave of the study. WHS+ surveys are designed by the World Health Organization and implemented by national agencies in participating countries.

ABSTRACT

The World Health Survey Plus (WHS+) is the World Health Organization's flagship household survey programme, which is hosted by the Survey Unit within the Department of Data and Analytics (DNA) in the Division of Data Analytics and Delivery for Impact (DDI).

The WHS+ is focused on generating data needed to align with shifting data needs in health programming, policy and analysis, while also working to strengthen household survey systems in member countries.

WHS+ builds on WHO's experience with generating, analyzing and disseminating representative data from household surveys in over 101 countries.

The WHS+ provides a data collection system for countries to monitor their progress towards population health targets, health-related SDGs, and WHO's impact framework.

The WHS+ will drive measurement of strategic health goals and add value to countries' data collection.

AIM

The aim of the WHS+ is to generate valid, reliable, comparable and timely information on a range of health and well-being outcomes and determinants of public health importance in nationally representative target populations. The results from the WHS+ will support WHO member states to track progress on country-specific objectives and towards Universal Health Coverage (UHC) and HR-SDG targets, and WHO's Impact Framework approved by Member States.

PRIMARY OBJECTIVES

Create a robust multi-functional data collection platform for generating data to monitor progress on national priorities, HR-SDGs and UHC.

Support countries to generate, analyse and use high-quality data to fill data gaps.

Develop standardized, computerized data collection strategies that enable speedier data collection and more reliable comparison across countries.

ADDITIONAL OBJECTIVES

Develop capacities in using evidence for policy

Institutionalize a regular data generation platform in countries

Provide tools and methods for better sequencing and coordination between studies

Pursue improvements in integrating survey data into health information systems

Provide methods for the inclusion of neglected topics and population groups

Build on post-census surveys with up-to-date sampling frames

Introduce a suite of data collection and analysis tools to use alongside National Statistics Offices and the United Nations Statistics Division

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 4500 Antimicrobial Resistance
 5000 Health Care Utilisation
 6000 Social Networks
 7000 Quality of Life (WHOQoL-8)
 8000 Preventing Unsafe Abortion

KIND OF DATA

Sample survey data [ssd]

UNIT OF ANALYSIS

Households and individuals

Version

VERSION DESCRIPTION

v0.1: Edited, weighted anonymous dataset for public distribution.

VERSION DATE

2024-12-31

Scope

NOTES

The scope of the World Health Survey Plus includes:

HOUSEHOLD: household characteristics, migration, housing, water sanitation and hygiene, clean fuels, assets and household income, household expenditure.

INDIVIDUAL: socio demographic characteristics, Covid-19 vaccination, health state, disability, assistive technology, anthropometrics, performance tests and biomarkers, tobacco use, alcohol use, diet, physical activity, chronic conditions and health service coverage, accidents/injuries, antimicrobial resistance, health care utilisation, social networks, quality of life, preventing unsafe abortion.

TOPICS

Topic	Vocabulary
World Health Survey Plus (WHS+)	Survey

KEYWORDS

Keyword	Vocabulary	URI
Abortion, Air pollution, Alcohol, Anaemia, Antimicrobial resistance, Assistive technology, Cancer, Cardiovascular disease, Cervical cancer, Chronic respiratory diseases, Coronavirus disease (COVID-19), Deafness and hearing loss, Depression, Diabetes, Disability, Drowning, Eye care vision impairment and blindness, Financial protection, Food safety, Health equity, Health financing, Health workforce, Healthy diet, Hospitals, Hypertension, Mental health, Noncommunicable diseases, Nutrition, Obesity, Oral Health, Physical activity, Primary health care, Quality of care, Road traffic injuries, Refugee and migrant health, Social determinants of health, Suicide, Tobacco, Traditional Complementary and Integrative Medicine, Universal Health Coverage, Vaccines and immunization, Violence against women, Water sanitation and hygiene (WASH)	WHO Health topics	Link

Coverage

GEOGRAPHIC COVERAGE

National coverage

UNIVERSE

The WHS+ will include all male and female adults (18 years of age and older) who are not out of the country during the survey period.

The target population includes any adult, male or female age 18 or over living in private households.

Populations in group quarters, on military reservations, or in other non-household living arrangements will not be eligible for the study.

People who are in an institution due to a health condition (such as a hospital, hospice, nursing home, home for the aged, etc.) at the time of the visit to the household are interviewed either in the institution or upon their return to their household if this is within a period of a week from the first visit to the household.

Producers and sponsors

PRIMARY INVESTIGATORS

Name	Affiliation
Professor Abhinav Vaidya	Nepal Public Health Research and Development Center (PHRD Nepal)

PRODUCERS

Name	Affiliation	Role
Dr Janak Thapa	Nepal Public Health Research and Development Center (PHRD Nepal)	Survey Manager

FUNDING AGENCY/SPONSOR

Name	Abbreviation
World Health Organization	WHO

OTHER IDENTIFICATIONS/ACKNOWLEDGMENTS

Name	Affiliation	Role
Ravi Shankar	WHO GIS Centre for Health	GIS support
Jaouad Tilout	WHO GIS Centre for Health	GIS support

Sampling

SAMPLING PROCEDURE

The WHS+ Nepal design used a stratified sample of enumeration areas (EAs) from which households and residents were sampled for interviewing during the field work.

A sampling frame containing data from the Nepal 2021 population census was provided, containing 36,229 enumeration areas. Out of these, 897 had less than 10 households, according to the census count. These were not considered eligible for sampling in the WHS+.

Therefore, the final list of EAs from which a sample was obtained comprised 35,332 EAs.

In the absence of relevant information that could be used to stratify the EAs according to socio-economic characteristics, the stratification adopted was by Province and District, the two major administrative units identified in the sampling frame.

Nepal is divided into 7 provinces and 77 districts, which were used as the sampling strata.

The WHS+ sample was intended to be spread in all the country's administrative regions defined by these districts.

Given the requirement that the overall sample size for the WHS+ should be 6,000 households and considering that 15 households are to be selected from each sampled EA after updating the corresponding list of households, a target sample of 400 EAs was defined.

The final total sample size was 402 EAs. This slightly larger sample of EAs results from rounding allocations of target numbers of EAs to sample per district, and from specifying a minimum sample size of 2 EAs per district.

The allocation of the sample of EAs to the districts was performed in two steps.

First, the overall sample of 400 EAs was distributed between the provinces proportionally to the number of households in each province. Then the target sample of EAs in each province was distributed between its districts proportionally to a size measure defined as $\text{'cen_hhld'}^{0.8}$ (i.e., the power 4/5 of the number of households in each district). The use of the power 0.8 aimed at smoothing the allocation to avoid extreme values of the sample size in each district.

After the initial calculation of the district sample sizes, a few districts that had target sample sizes less than 2 were allocated samples of at least 2 EAs, and the largest district that had an initial sample allocation of 25 EAs had its allocation reduced to 20 EAs.

As already mentioned, the rounding and these allocation changes produced a total sample size of 402 EAs across all the 77 districts in Nepal.

Sampling of eligible EAs within districts was carried out using Pareto PPS Sampling.

The size measure considered for sampling the EAs was defined as: where H_k denotes the number of households in EA k . The idea of using truncation of the EA sizes in the range [50; 1000] aims to avoid having extreme weights, which would increase the variability of the resulting sample estimates.

After the initial sample of 402 EAs was selected, the list of sampled EAs was provided to the Nepal Public Health Research and Development Center (PHRD Nepal), the local agency in charge of data collection in Nepal.

They tried to secure access to maps and descriptions of the sampled EAs but were not successful.

Instead, the WHO GIS Centre for Health (GISC) was only able to secure access to the maps and descriptions of wards that contained at least one sampled EA.

In addition, the high cost of data collection meant that the survey team would not be able to visit all 77 districts within Nepal.

Therefore, a sample of districts was selected and only wards in the sampled districts were maintained in the final area sample.

The sampling of districts was carried out according to the following steps.

1. Three districts were included in the sample with certainty: Bhaktapur, Kathmandu and Lalitpur.
2. The remaining 74 districts were stratified into four strata, using a composite index derived as the arithmetic average calculated from three socioeconomic indicators for each district ranging from 0-100, and arranged such that larger values represent improved socioeconomic conditions: $100 * (\text{Human Development Index}) + (100 * \text{Female Literacy Rate}) + 100 * (\text{Per Capita Income}) / 3166$.
3. The stratum boundaries and allocation were obtained using an optimal stratification approach proposed by (Brito et al., 2019) implemented in the `stratbr` package in R.
4. 8 districts in stratum 'st4' were included in the sample with certainty, given the optimal allocation assigned to this stratum equaled the total number of districts in it. This happened because this stratum had larger variance of the composite index when compared to the others.
5. The other 27 districts were sampled from within the 3 strata defined using a Pareto Probability Proportional to Size

sampling (Pareto PPS) method (Rosén, 2000) available from the sampling package in R (Matei & Tillé, 2006).

In the end, 233 of the wards previously sampled located in the $27+3+8 = 38$ districts sampled as described above were retained for the WHS+ survey.

Since the target sample size for the survey was a total of 6,000 households, a total of 26 households were sampled per ward, yielding an expected sample of 6,058 households.

Given that the local survey team would not be able to obtain maps for the enumeration areas sampled within those 233 wards, and the fact that most wards are too large for conducting direct enumeration of households across the whole ward, an alternative approach was implemented.

The approach involved work from the GISC team using satellite imagery and GIS technology to digitize buildings in each one of the 233 wards retained in the sample. Once these building lists within each ward were compiled, three sets of 26 building coordinates were sampled within each ward by simple random sampling without replacement (SRSWOR). Such lists were labelled "Initial", "First reserve" and "Second reserve", respectively.

The idea was that the first set of 26 building coordinates (labelled "Initial") would be allocated to the field team for visiting and interviewing. It is likely that several such buildings contain no eligible households for the WHS+. After the initial set of buildings was approached and the number of interviews missing from the ward was known, the second set of building coordinates (labelled "First reserve") were allocated to the field team to conduct the visits and attempt to obtain interviews. If necessary, the third set of building coordinates (labelled "Second reserve") were also allocated to the field team to try to achieve the target of 26 interviews per sampled ward.

For individual interviews, one person aged 18 or older per household was eligible to participate.

The eligible individual was selected with equal probabilities using the CAPI program from a list of eligible household members.

Stages of selection

Strata: Province, District = $7 \times 38 = 266$

PSU: Wards=231 surveyed

SSU: Households=6110 surveyed

TSU: Individuals=6110 surveyed

RESPONSE RATE

Response rates

response rate=% of households/persons who completed the interviews amongst all eligible households/persons, including those who were not successfully contacted.

Household

Response rate=92%

Individual:

Response rate=92%

WEIGHTING

Weights

Household weights (variable hhweight) for analysis at household level and individual weights(variable pweight) for analysis at person level were calculated.

Basic household and person weights were computed as the reciprocals of their corresponding selection probabilities, considering all stages of selection.

Basic household weights were then calibrated to population totals by province, locality(urban/rural), sex and age groups (00-14, 15-49, 50-59, 60-69, 70+) according to the 2023 population projections from Central Bureau of Statistics (CBS) Nepal.

Calibration was done on the marginal distributions, using raking, and was such that all individuals within a sampled household would have the same calibrated weight.

Basic individual weights were calibrated to population totals by sex, age-groups (18-29, 30-39, 40-49, 50-59, 60-69, 70+), locality(urban/rural) and province according to the 2023 population estimates from the CBS Nepal.

Calibration was done on the marginal distributions, using raking.

Weights are not normalised, and their sum over the total sample will return estimates of population sizes.

Where the hhweight and/or pweight has a missing value this is because either the sampling information is missing or the sex, age is missing.

Data collection

DATES OF DATA COLLECTION

Start	End
2023-09-05	2023-12-17

DATA COLLECTION MODE

Computer Assisted Personal Interview [capi]

SUPERVISION

Monitoring and coordination were effectively implemented under the strategic oversight of senior management within the established project framework.

The Senior Program Manager, in close collaboration with the Country Coordinator, developed a comprehensive monitoring plan that was systematically communicated to all project team members.

Serving as a critical liaison among senior management, provincial coordinators, and field teams, the Research Officer ensured clear, timely, and consistent communication throughout the survey implementation process.

In instances of CAPI system-related challenges, the Research Officer promptly reported issues to the WHO technical team and facilitated appropriate solutions to support uninterrupted field operations.

All survey activities were conducted under the direct supervision and guidance of the Senior Program Manager, who also provided ongoing coordination and monitoring support to study teams through regular phone communication.

Provincial Coordinators were responsible for overseeing data quality at the subnational level, ensuring strict adherence to established study protocols and procedures.

Monitoring visits were conducted across multiple study areas by core teams from PHRD Nepal, along with representatives from the Ministry of Health and Population.

Prior to each visit, study teams were formally informed of the monitoring schedule and objectives to ensure preparedness and transparency.

During these monitoring visits, supervisors closely observed study teams and biomarker personnel during data collection to assess compliance with protocols and data quality standards.

In total, 15 monitoring visits were completed across various study locations.

The PHRD Nepal teams conducted visits in Kathmandu, Lalitpur, and Bhaktapur, while Ministry of Health and Population representatives covered areas including Nawalparasi and Chitwan.

These coordinated monitoring efforts played a vital role in maintaining the quality, consistency, and reliability of the survey data throughout the data collection period.

DATA COLLECTION NOTES

Fieldwork training was conducted 10-16 August in Kathmandu.

The pilot study was conducted on 17 August in three wards in each of four municipalities; Banepa; Dhulikhel; Mandandeupur; and Panchkal.

These 12 wards were in the Kavrepalanchok district in Bagmati province.

A debriefing session was held on 18 August.

There were 12 data collection teams. Each team comprised one supervisor, four interviewers and one biomarker collector giving a total of 72 personnel.

Data collection was carried out from 5 September to 17 December 2023 inclusive with a break from 11-19 November to observe the Dashain, Tihar, and Chhat festivals. Total of 95 days.

Target sample size was 6110 households.

The implementing agency was the Nepal Public Health Research and Development Center (PHRD Nepal).

There were 15 monitoring visits to different study areas during the 95 days of data collection.

The monitoring team from PHRD visited Kathmandu, Lalitpur, Bhaktapur, Kavrepalanchok, Siraha, Saptari, Dhanusha, Mohattari, Rautahat, Bara, Kaski and Mugu.

Representatives from the Ministry of Health and Population (MoHP) visited Nawalparasi and Chitwan.

DATA COLLECTORS

Name	Abbreviation
Nepal Public Health Research and Development Center	PHRD Nepal

Questionnaires

QUESTIONNAIRES

The WHS+ questionnaires were based on the SAGE questionnaires with some modifications and many new modules.

A Household questionnaire was administered to all households eligible for the study.

An Individual questionnaire was administered to eligible respondents identified from the household roster by the CAPI programme.

The questionnaires were developed in English. The CAPI template produced by Survey Solution Designer was translated into Nepali.

The English questionnaires are available as external resources.

Data Processing

DATA EDITING

Data editing took place at a number of stages including:

- (1) During data entry
- (2) Structure checking and completeness
- (3) Secondary editing

Access policy

CONTACTS

Name	Affiliation	Email	URL
Nirmala Naidoo	World Health Organization	whsplus@who.int	Link

ACCESS CONDITIONS

The user undertakes:

- (1) to keep confidential any information concerning individual persons or households.
- (2) not to distribute the data to any other user.
- (3) to use the data for scientific research only and to be used solely for reporting of aggregated information, and not for investigation of specific individuals or organizations.
- (4) to share any planned publications with WHO prior to publication.
- (5) to site the source of data in accordance with the Citation Requirement provided with each dataset for any books, articles, conference papers, theses, dissertations, reports, or other publications that employ data obtained from the Multi-Country Studies Data Archive.
- (6) to share an electronic copy of all reports and publications based on the requested data with WHO.

The Nepal Public Health Research and Development Center (PHRD Nepal) and the World Health Organization bear no responsibility for use of the data or for interpretations or inferences based upon such uses.

CITATION REQUIREMENTS

"World Health Organization, World Health Survey Plus Nepal 2023, Version 1.0 of the public use dataset (January 2026), provided by the Multi-Country Studies Data Archive
<https://apps.who.int/healthinfo/systems/surveydata/index.php/collections/WHSPPlus>"

ACCESS AUTHORITY

Name	Affiliation	Email	URL
Nirmala Naidoo	World Health Organization	whsplus@who.int	Link

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Metadata production

DDI DOCUMENT ID
DDI-NPL-WHO-WHSPLUS-2023-V01

PRODUCERS

Name	Affiliation	Role
Nirmala Naidoo	World Health Organization	Supervision and review of metadata and documentation of study

DATE OF METADATA PRODUCTION
2024-05-31

DDI DOCUMENT VERSION
Version 1.0 (May 2024)

Data Dictionary

Data file	Cases	Variables
WHS+NPLHHData	6485	672
WHS+NPLINDData	6485	787