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Health Survey for England 2012

User Guide

Joint Health Surveys Unit:
NatCen Social Research
Department of Epidemiology and Public Health, University College London

A survey carried out for the Health and Social Care Information Centre

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NatCen Social Research
35 Northampton Square
London EC1V 0AX
T 020 7250 1866
www.natcen.ac.uk

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Contents.

1 Background

The data files contain data from the Health Survey for England 2012 (HSE), the twenty-second year of a series of surveys designed to monitor trends in the nation's health. The 2012 Health Survey was commissioned by the Health and Social Care Information Centre and carried out by the Joint Health Surveys Unit of NatCen Social Research and the Department of Epidemiology and Public Health at UCL (University College London).

The aims of the Health Survey series are:

- to provide annual data about the nation's health;
- to estimate the proportion of people in England with specified health conditions;
- to estimate the prevalence of certain risk factors associated with these conditions;
- to examine differences between population subgroups in their likelihood of having specific conditions or risk factors;
- to assess the frequency with which particular combinations of risk factors are found, and which groups these combinations most commonly occur;
- to monitor progress towards selected health targets including the prevalence of overweight and obesity in children.

The focus for the 2012 survey was physical activity. The survey also provided updates on core topics including smoking, drinking and general health. Additional non-core modules of questions were also included, covering average weekly alcohol consumption, gambling, well-being, and sexual health.

The report on this survey, including a detailed Methods and Documentation volume, is published at www.hscic.gov.uk/pubs/hse2012

See also www.hscic.gov.uk/health-survey-england

2 Survey design

The HSE 2012 included a general population sample of adults and children, representative of the whole population at both national and regional level. For the sample, 9,024 addresses were randomly selected in 564 postcode sectors, issued over twelve months from January to December 2013. Where an address was found to have multiple dwelling units, one dwelling unit was selected at random and where there were multiple households at a dwelling unit, one household was selected at random.

In each selected household, all individuals were eligible for inclusion in the survey. Where there were three or more children aged 0-15 in a household, two of the children were selected at random. A nurse visit was arranged for all participants who consented.

A total of 8,291 adults aged 16 and over and 2,043 children aged 0-15 were interviewed. A household response rate of 64% was achieved for the core sample. Among the general population sample, 5,470 adults and 1,203 children had a nurse visit.

Height was measured for those aged two and over and weight for all participants. Nurses measured blood pressure (aged 5 and over) and waist and hip circumference (aged 11 and over). Non-fasting blood samples (for the analysis of total and HDL cholesterol and glycated haemoglobin) were collected from adults aged 16 and over. Urine samples (for the analysis of sodium, potassium and creatinine) were collected from adults aged 16 and over. Saliva samples for cotinine analysis were collected from children aged 4-15. Nurses obtained written consent before taking samples from adults, and parents gave written consent for their children's samples. Consent was also obtained from adults to send results to their GPs, and from parents to send their children's results to their GPs.

3 Documentation

The documentation has been organised into the following sections

- Interview: contains the CAPI documentation for household and individual questionnaires, nurse visit questionnaires, self-completion booklets and showcards
- Data: contains the list of variables and list of derived variables including SPSS syntax specification
- Other instructions: contains interviewer, nurse and coding and editing instructions.

Note that the questionnaires show the variable names used in the CAPI programme. In some cases the variables in the data set have a different name; in these cases the variable name used in the data is also shown, in red.

4 Using the data

The HSE 2012 data consists of two files; one at individual level and one at household level:

HSE2012ai.sav	10,334 records	Contains data for all individuals in household who gave a full interview. It contains information from the household questionnaire, main individual schedule, self-completions and the nurse visit (where one occurred).

HSE2012ah.sav	12,287 records	Contains data on household composition, sex, age and marital status for all individuals in co-operating households (including those not interviewed).

4.1 Variables on the files

Each of the data files contain questionnaire variables (excluding variables used for administrative purposes), demographic information including household composition and derived variables. The variables included in both files are detailed in the "**List of Variables**" document in the data section of the documentation. This document is the best place to look in order to plan your analysis. It includes:

- Major categories of variables (e.g. General Health, Blood Sample)
- Sub categories of variables (e.g. Longstanding illness (within General health), Measurements from laboratory analysis (within Blood Sample),
- Source of each variable (e.g. Individual questionnaire, Nurse Visit, Self-completion booklet, Derived variable etc.)

Once you have decided which variables to include in your analysis, you can look up details of the question wording using the interview section documentation (all variables on the data file are given by name in the copy of the interview schedules provided), or use the "**Derived Variables Specification**" document in the data section of the documentation for how the variables were derived.

Note that the variable labels used in the interview/CAPI documentation are sometimes different from the variable names used in the data set. In these cases, the data variable label is shown in red beside the CAPI label.

4.2 Multicoded questions

Multicoded questions, where for example the interviewer or nurse is instructed to “CODE ALL THAT APPLY” or where an open ended question has elicited more than one answer, are stored in the archived HSE 2012 data sets in two ways, coded either **by mention** or **by category**. Questions coded by mention are stored as categorical variables where the complete value set is repeated in each of the variables. Questions coded by category are stored as indicator variables where each value in the set is stored as its own variable. Both approaches have been used in the 2012 Health Survey.

As an example, question ConSubX (in the CAPI)/ConSbX (in the dataset) on the 2012 adult nurse schedule is a "CODE ALL THAT APPLY" question which asks “Have you eaten, smoked, drunk alcohol or done any vigorous exercise in the past 30 minutes?”. The code frame consists of five values:

1 - eaten

2 - smoked

3 - drunk alcohol

4 - done vigorous exercise

5 - none of these

If recorded by mention, four variables would record the (up to) four possible responses to the question assigning codes 1-5 in the first variable and codes 1-4 in each of the next three variables. In 2012, the variables CONSBX11-15 store the answer to this question by category as follows:

CONSBX11 - coded 1 for those who ate in the last 30 minutes and 0 for those that didn’t.

CONSBX12 - coded 1 for those who smoked in the last 30 minutes and 0 for those that didn’t.

CONSBX13 - coded 1 for those who drank alcohol in the last 30 minutes and 0 for those that didn’t.

CONSBX14 - coded 1 for those who did vigorous exercise in the last 30 minutes and 0 for those that didn’t.

CONSBX15 - coded 1 for those who did none of the above in the last 30 minutes and 0 for everyone else.

Because a participant could have replied with more than one answer, that participant could have a value 1 for a number of these variables (however, the nature of the question dictates that having a code 1 at CONSBX15 precludes having a code 1 at any of the variables CONSBX11 – CONSBX14). The missing values are the same across all six variables.

Documentation for the CAPI questionnaires (household and individual) shows only the name of the first variable (which stores the number of mentions). So, for the example given above this variable name is ConSbX.

4.3 Missing values conventions

These missing value conventions have also been applied to most of the derived variables as well as the original questionnaire variables. The derived variable specifications should be consulted for details.

-1 Not applicable: Used to signify that a particular variable did not apply to a given participant usually because of internal routing. For example, men in women only questions or self completion variables when the participant is not of the given age range to answer that particular self-completion booklet.

-8 Don't know, Can't say.

-9 No answer/ Refused.

4.4 Valid cases

In the 2012 Health Survey report, as in previous reports, cases were excluded from the analysis of anthropometric and blood pressure measurements if their measurement was invalid. For example, those who had smoked, drunk, eaten, or exercised within 30 minutes of having their blood pressure taken were excluded from analysis as this can affect blood pressure. Individual report chapters will specify any exclusions. The report chapters specify any such exclusions.

4.5 Notes about particular variables

4.5.1 Longstanding illness questions

The questions on longstanding illness were changed in 2012 – see Volume 2, Methods and Documentation of the report, Section 3.4 for details. The new questions explicitly ask about physical and mental health, separate the concept of disability from illnesses or health conditions, and refer to illnesses or conditions 'lasting or expected to last 12 months or more' rather than 'over a period of time'.

4.5.2 Revisions to some Cardiovascular and Blood pressure variables

In 2011 some revisions were made to some of the cardiovascular and blood pressure variables in light of comments from users and changes to definitions since last using these modules in the HSE series. See the HSE 2011 User Guide for details. Some of these revised variables are included in the 2012 data.

4.5.3 Cholesterol measurement

During 2010 (from the 12th of April, 2010), the laboratory that carries out the analyses on the blood and urine samples taken during the HSE interview introduced new analytical equipment. This had no affect on most analytes, but resulted in a slight change in the reference range for total and HDL cholesterol after that date. A flag variable was computed for 2010 data (called CHOLFLAG) which shows whether a sample was tested before or after the equipment change during that year. If analysts are making comparisons between 2010 and 2012 results and those from previous years, they may make allowance for this difference if they wish to adjust the cholesterol results. Note that the difference (an average of 0.1mmol/L) was very small and in most analyses this difference is unlikely to be statistically significant.

4.5.4 Urine measurement

Note that from May 2012, there was a change to the recording of values at the upper end of the range for sodium (**sodium**) and potassium (**potass**). From this date, the following applies:

sodium: values below 10 are all recorded as 9 (as in previous surveys)
values above 250 are all recorded as 251 (since May 2012)

potass: values below 3 are all recorded as 2 (as in previous surveys)
values above 100 are all recorded as 101 (since May 2012)

New binary variables **sodiumR** and **potassR** have been added to indicate which were sampled before and after May 2012.

This change to recording practice may affect the calculation of means from the date that the change was implemented.

5 Weighting variables

Before 2003, the weighting strategy for the core sample in the HSE was to apply selection weights only (used for instance when a single household was selected from multiple households at an address, or where there were more than two children in a household), and no attempt was made to reduce non-response bias through weighting. However, following a review of the weighting for the HSE and other government funded surveys, non-response weighting has been incorporated in the weighting strategy since 2003. The same strategy as in 2003 has been followed for weighting the HSE 2012 sample data. For more detailed information on how the weights were produced see Health Survey for England 2012: Volume 2: Methods and documentation http://www.hscic.gov.uk/ pubs/hse2012 .

A household weight has been generated for the general population sample which adjusts for non-contact and refusal of households; this is described in more detail in section 5.1 below. Individual level non-response weights have also been generated for the general population and are described in section 5.2 onwards.

The individual weights adjust for the additional non-response among individuals in participating households and additional weights take into account participants' participation in different elements of the survey: interview, nurse visit, blood sample, urine sample, cotinine (from the saliva sample) and the self completion and gambling module.

5.1 Household weight

The household weight (***wt_ hhld***) is a household level weight that corrects the distribution of household members to match population estimates for sex/age groups and GOR. These weights were generated using calibration weighting, with the household selection weights as starting values. The household selection weights also correct for the selection of a single household at addresses with more than one. Note that the population control totals used for the calibration weighting were the ONS projected mid-year population estimates for 2011, with a small adjustment to exclude the population aged 65 and over living in institutions, based on data from the 2001 census.

5.2 Interview weight

For analyses at the individual level, the weighting variable to use is (***wt_int***)**.** These weights are generated separately for adults and children:

- For adults (aged 16 and over)**,** the interview weights are a combination of the household weight and a component which adjusts the sample to reduce bias from individual non-response within households;
- For children (aged 0 to 15), the weights are generated from the household weights and the child selection weights – the selection weights correct for only including a maximum of two children in a household. The combined household and child selection weight were adjusted to ensure that the weighted age/sex distribution matched that of all children in co-operating households.

5.3 Nurse weight

To take into account non- response to the nurse section of the survey, a nurse weight has been generated (***wt_nurse***) and should be used on all analysis of questions asked during the nurse visit.

5.4 Blood weight

A blood weight has been generated for all adults who had a nurse visit, were eligible for, agreed and were able to give a blood sample. This weight (***wt_blood***) should be used on all analysis of questions asked relating to blood samples.

5.5 Urine weight

A urine weight has been generated for all adults who had a nurse visit and were able to give a urine sample. This weight (***wt_urine***) should be used on all analysis of questions asked relating to blood samples.

5.6 Cotinine weight

A cotinine weight (from the saliva sample) has been generated for children aged 4-15 who had a nurse visit and were eligible for a saliva sample. This weight (***wt_cotinine***) should be used on all analysis of questions asked relating to saliva samples.

5.7 Self completion and gambling weight

The self completion (***wt_sc***) and gambling weights (***wt_gambling***) were generated for use in tables in the gambling chapter (Chapter 7) of the HSE 2012 report. The self completion weight was used for Tables 7.1-7.7 for analysis of the question about gambling activities in the last 12 months. The gambling weight was used for Tables 7.8 - 7.11 for analysis of the gambling screens for problem gamblers.

5.8 Selecting the appropriate weight variable

Six different weights have been provided, for data from different stages of the survey:

- Interview stage
- Gambling module in self-completion (adults only)
- Nurse visit
- Urine sample (adults only)
- Saliva sample (children only)
- Blood sample (adults only)

If questions from different stages of the survey are combined in analysis, the weights for the latest stage of the survey should be used (that is, the latest in the list above). For instance, if blood sample results are being cross-tabulated with questions from the interview stage, the blood sample weight should be used; or if waist circumference results (from the nurse visit) are cross-tabulated with BMI data from the interview, the nurse visit weight should be used.

Where weights have been generated for specific modules, i.e for 2012 the gambling module weight, or when analysing cotinine, please ensure you use the specific weights rather than the generic interview or nurse weights.

6 Combining HSE data

The 2012 HSE data includes stratification (Cluster) and PSU (Primary Sampling Unit) variables with the prefix 12 to represent the survey year. This has been included for the first time to enable users to differentiate between strata and psu variables when combining different HSE years together. It is the intention that the data for previous years of HSE will be updated to include new PSU and Cluster variables with the survey year prefix.

Until the datasets are updated with this prefix, if you are intending to carry out analysis combining multiple years of HSE, **it is recommended that you add a survey year prefix** to the PSU and Cluster variables for each year **before combining** the datasets. This is because the same numbers are used for PSU and Cluster each year, although they do not represent the same geographical area from year to year.

7 HSE 2012 report

Further information about the Health Survey for England 2012 is available in the following publications:

- Craig R and Mindell J (eds). *Health Survey for England 2012: Volume 1. Health, social care and lifestyles*. The Health and Social Care Information Centre, Leeds, 2012.

- Craig R and Mindell J (eds). *Health Survey for England 2012: Volume 2. Methods and documentation*. The Health and Social Care Information Centre, Leeds, 2012.

- Craig R and Mindell J (eds). *Health Survey for England 2012: Health, social care and lifestyles. Summary of key findings*. The Health and Social Care Information Centre, Leeds, 2012.

These can be found at t www.hscic.gov.uk/pubs/hse2012

See also www.hscic.gov.uk/health-survey-england

Trend tables for the Health Survey for England series can be found at www.hscic.gov.uk/pubs/HSE2012trend:

- Adult Trend Tables 2012. The Health and Social Care Information Centre, Leeds, 2012.

- Child Trend Tables 2012. The Health and Social Care Information Centre, Leeds, 2012.

- Health Survey for England 2012: Trend tables (commentary). The Health and Social Care Information Centre, Leeds, 2012.

- Population Number Estimate Tables 2012. The Health and Social Care Information Centre, Leeds, 2012.

- Population Number Estimates - user guide. The Health and Social Care Information Centre, Leeds, 2012.

Further information about the Health Survey for England in general can be found on the respective websites of the Health and Social Care Information Centre, NatCen Social Research and UCL (University College London):

www.hscic.gov.uk/article/3741/Health-Survey-for-England-Health-social-care-and-lifestyles

www.natcen.ac.uk/our-research/research/health-survey-for-england/

www.ucl.ac.uk/hssrg/studies/hse

Appendix A.

HEALTH SURVEY FOR ENGLAND 2012 – CONTENTS

Household data

Household size, composition and relationships	Household income
Accommodation tenure and number of bedrooms	Type of dwelling and area
Economic status/occupation of household reference person	Smoking in household
	Car ownership

Individual level information

	Age							
	0-1	**2-3**	**4**	**5-7**	**8-10**	**11-12**	**13-15**	**16+**
Interviewer visit								
General health, (limiting) longstanding illness, acute sickness	●	●	●	●	●	●	●	●
Personal care plans								●
Self-reported height and weight								●
Doctor-diagnosed hypertension, diabetes								●
Social care								●
Adult physical activity								●
Child physical activity		●	●	●	●	●	●	
Smoking					● [a]	● [a]	● [a]	● [b]
Drinking (heaviest drinking day last week, average weekly consumption)					● [a]	● [a]	● [a]	● [b]
Economic status/occupation, education								●
Ethnic origin	●	●	●	●	●	●	●	●
Reported birth weight	●	●	●	●	●	●	●	
Height measurement		●	●	●	●	●	●	●
Weight measurement	●	●	●	●	●	●	●	●
Consent to linkage to NHS Central Register/Hospital Episodes Statistics								●
Self completion								
GHQ-12								●
EQ-5D								●
Gambling								●
Sexual health								●
Perception of own weight/child's weight								●
Sexual orientation, religion								●
Nurse visit								
Immunisations	●							
Prescribed medicines	●	●	●	●	●	●	●	●
Nicotine replacement products								●
Waist and hip circumference						●	●	●
Blood pressure				●	●	●	●	●
Saliva sample			●	●	●	●	●	
Urine sample								●
Blood sample (non-fasting)								●
Nurse self-completion								
Warwick Edinburgh mental well-being scale								●

[a] This module was administered by self-completion for children aged 8-15.

[b] This module was administered by self-completion for those aged 16-17 and some aged 18-24.