Session 1

Introduction to the Health Survey for England

Pierre Walthery & Vanessa Higgins
ESDS Government
Programme of the workshop

• Day 1: Introduction to the data and Stat-JR
  First practical
  Dinner and guided tour

• Day 2: Multilevel modelling using Stat-JR
  ( Mostly ) continuous response
  Maximum Likelihood/MCMC

• Day 3: Binary responses models
  and ebooks
Today

**Session 1**
Introduction to the data (Pierre Walthery - ESDS)

*Coffee*

**Session 2**
Stat-JR (Bill Browne – Bristol University)
- Interoperability with Stata, MLwiN, R
- Practical session
  - Descriptive analysis of the HSE using STAT-JR
  - Fitting single level models in STAT-JR

*Marx and Engels tour of Manchester*

*Dinner*
This presentation

1. About ESDS

2. Acquiring and using ESDS data

3. The Health Survey for England
   - Survey Design
   - Usage of the data
   - Obesity
ESDS overview

- National data archiving, dissemination and support service, established 2003 (for key economic and social data). Funded by the ESRC

- Distributed service, bringing together centres of expertise
  - UK Data Archive (UKDA)
  - Centre for Census and Survey Research (CCSR)
  - Manchester Information & Associated Services (MIMAS)
  - Institute for Social and Economic Research (ISER)

- Access and User Support (helpdesk, user guides, workshops etc)

- Longitudinal, international, government
Digital Social Science (formerly E-Stat)

Part of the ESRC NCeSS programme

Combining of statistical and computing expertise
• Researchers interested in statistical methodology
• Computer scientists
• Applied & non/moderately technical users

Enable cutting edge methodological developments to help quantitative researchers learn and do better research

Other applications
– Runmlwin (Leckie)
– Transferable measurement tool of family formation in longitudinal surveys (Walthery and Plewis)
The Health Survey for England
Accessing data

- All users can access study descriptions, online documentation, including questionnaires, free of charge without registering with ESDS.

- In order to access the datasets you need to register with ESDS:
  - Register online using your UKFederation username and password.
  - Simple online form, takes about 10 minutes.
  - You need to register a usage of the data/project as part of this process.
  - Non-commercial users: free of charge.
  - You need to agree to the End User Licence when you register.
The End User Licence

• This is not public data!
• We need to know who you are, how to contact you and what you are using the data for
• Agree not to attempt to identify individuals
• Only use the data for your stated purpose (you can re-register if you want to use the data for another use)
• Do not pass the data to unregistered parties (that includes deleting the data before passing on PCs!)
• Tell us if you publish using the data
Special Licence

- A Special Licence (SL) is required for data which pose a higher risk of disclosure

- A SL requires the signature(s) of the researcher(s) and their institution. It also needs the explicit permission of the data owner

- Surveys such as the Annual Population Survey and the Labour Force Survey include special licence versions

- We hope to deposit the HSE data we are using today under special licence
Obtaining data once registered

- Users then
  - Download the data to their local machine selecting their preferred format (STATA, SPSS, TAB etc)

Or

- Place an order for the data (Special Licence; commercial projects; special conditions if no online agreement) and complete all relevant forms

NB: Depositor permission: in most cases, ESDS has to request permission from the data owner to supply data for commercial purposes.
## Health Survey for England list of datasets

Users should obtain the data and documentation using the table below.

**19 April 2010: Body Mass Index (BMI) variables**
The children's BMI variables included in Health Survey for England datasets from 1995 onwards are now available. Users should note that the original variables bmicur, bmicur2 and bmicur3 are unreliable and should not be used. Further information is available from the Information Centre for Health and Social Care [Health Survey for England web page](http://www.ic-hsc.org.uk/). Users are advised to visit the Health Survey for England web pages for support in using these data, additional resources, and news and events.

See [Exploring differences in health SPSS workbook for students](http://www.ic-hsc.org.uk/).  

### Study Description

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<th>SN</th>
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<th>Doc</th>
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Documentation

- Questionnaires
- Codebooks
- Information about derived variables
- Technical information on data quality:
  - sample design,
  - non-response,
  - weighting etc.
Variable search

Datasets for Health Survey for England

For each survey entry all variables are listed with further information giving the distribution of each variable and any additional information available. The Information and Download link takes you to the ESDS Access pages for that survey.

When searching you may wish to use common abbreviations for words (e.g. for government) if you don't get results you're expecting. This is because the survey documentation searched has used these abbreviations.

Search variables

You searched for hearing in the ESDS Government variables database for the Health Survey for England, not catalogue. There are 123 results:

- **HSE commheal** [Are his/her/His] communication problems to do with his/her/His hearing:

- **HSE disbaa** [Cannot follow a TV programme at a volume others find acceptable (with hearing aid if normally worn):

- **HSE disbaa3** [Cannot follow a TV programme at a volume others find acceptable (WITH HEARING AID IF NORMA
  - 1995.

- **HSE datmso**4 [Reason quit: Hearing about new treatment):

- **HSE hear** ([D) hearing disability):

**Health Survey for England, 2001 Variables**

- **hear** — (D) hearing disability

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<th>Value Label</th>
<th>Count Percentage</th>
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<td>No answer/refused</td>
<td>2 16%</td>
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<tr>
<td>-8.00</td>
<td>Don't know</td>
<td>5 0%</td>
</tr>
<tr>
<td>-7.00</td>
<td>Refused/not obtained</td>
<td>0 0%</td>
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<tr>
<td>-6.00</td>
<td>Schedule not obtained</td>
<td>0 0%</td>
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<tr>
<td>-5.00</td>
<td>Schedule not applicable</td>
<td>0 0%</td>
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<td>Item not applicable</td>
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<td>0.00</td>
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<tr>
<td>1.00</td>
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<tr>
<td>2.00</td>
<td>Severe</td>
<td>80 0%</td>
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19640 cases, missing values 1-99.

Copyright: Crown Copyright material is reproduced with the permission of the Controller of HMSO and the Queen's Printer for Scotland

Bank to the variable list

Documentation references

- HSE2001.pdf (pae 70, 1 mention)
ESDS Contacts

Helpdesk:

govsurveys@esds.ac.uk
(0161) 275 1980

Website:

www.esds.ac.uk/government
www.esds.ac.uk

Jisc list:

esds-govsurveys@jiscmail.ac.uk
The Health Survey for England

- Commissioned by The NHS Information Centre for health and social care and conducted by NatCen and UCL
- Key indicators for health
- Annual since 1991 (children since 1995)
- Cross-sectional
- Computer-assisted personal interviewing (CAPI) & CASI face-to-face interview followed by a nurse visit for a clinical examination
The Health Survey for England

Topics:

Core questions each year plus topic modules

Sample size, design and questionnaire vary to reflect topic e.g.

- 2003 cardiovascular disease
- 2004 ethnic minority groups
- 2005 older people
- 2006 cardiovascular disease
- 2007 knowledge and attitudes
- 2008 physical activity and fitness

Changes to Health and Social Care Survey in 2011
The English get fatter

The USA obesity problems are spreading to the UK

A fifth of English women and 17% of men are obese, according to a report for the Department of Health.

Official statistics, published on Wednesday, show the proportion of the population now classified as obese has risen by 4% since 1993.

In 1993, 13% of men and 16% of women were classified as obese.

The government says it is taking action to reverse the trend, but it does not expect an overnight solution.
Accessing the reports


- Health Survey for England - 2008: Physical activity and fitness

- Health Survey for England 2007: Healthy lifestyles: knowledge, attitudes and behaviour

- Health Survey for England 2006: CVD and risk factors adults, obesity and risk factors children

- Health Survey for England 2005: Health of Older People

BMI

• BMI = weight/height^2

• BMI categorical measure

<table>
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<tr>
<th>Category</th>
<th>BMI</th>
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<td>Underweight</td>
<td>18.5 or less</td>
</tr>
<tr>
<td>Desirable</td>
<td>Over 18.5 to 25</td>
</tr>
<tr>
<td>Overweight</td>
<td>Over 25 to 30</td>
</tr>
<tr>
<td>Obese</td>
<td>Over 30</td>
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</table>

NB: child BMI is calculated differently
Obesity is multi-factorial

- Factors contributing to obesity:
  - Energy intake (diet)
  - Physical activity levels (exercise)
  - The environment & locality
  - Social class (poverty)
  - Disease and disability
  - Genetics
  - Ethnic origin
  - Psychology and behaviour
  - Birth weight and rate of infant weight gain
  - Parental obesity
Patterns of obesity

• Obesity is more prevalent:
  – for those with lower qualifications
  – amongst those who are ill
  – in the North compared to the South

• Levels of obesity appear to be on the increase
Figure 7D

Overweight and obesity prevalence, 1993-2008, by sex (three year moving averages)

Base: Aged 16 and over with valid BMI measurement

Note: Data from 1993 to 2002 are unweighted. Data from 2003 onwards are weighted for non-response.

Source: HSE 2008
Figure 13D

Overweight and obesity prevalence of children aged 2-15, 1995-2008, by age and sex (three year moving averages)

Base: aged 2-15 with valid BMI measurement

Source: HSE 2008
Geographies of obesity

**Figure 4a**
London: Men’s BMI status
Base: Aged 16 and over with valid BMI

- Obese: 18%
- Desirable/underweight: 41%
- Overweight: 41%

**Figure 4b**
Yorkshire and the Humber: Men’s BMI status
Base: Aged 16 and over with valid BMI

- Obese: 25%
- Desirable/underweight: 34%
- Overweight: 41%

HSE 2003 cited in *Forecasting Obesity to 2010* (Zaninotto et al 2006)
HSE: adult obesity by region

Source: HSE 2001-2
Differences in obesity between men and women

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<thead>
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<th>Men</th>
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<td>Desirable/underweight</td>
<td>35%</td>
<td>44%</td>
</tr>
<tr>
<td>Overweight</td>
<td>43%</td>
<td>33%</td>
</tr>
<tr>
<td>Obese</td>
<td>22%</td>
<td>23%</td>
</tr>
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</table>

Source: HSE 2003/05 - Adults aged 16+ with a valid BMI

Economic and Social Data Service
Does obesity run in families?

Figure 9
Number of children obese, by parental obesity status and sex
Base: All aged 2-15 with valid BMI

Source: HSE 2003 taken from Forecasting Obesity to 2010 (Zaninotto et al 2006)
BMI and qualifications

Obesity prevalence according to level of qualification (HSE 2003/05)

- NVQ4/NVQ5/Degree
- No qualifications
BMI status and general health

BMI status – no illness

- Desirable or underweight: 18%
- Overweight: 37%
- Obese: 45%

BMI status – limiting illness

- Desirable or underweight: 31%
- Overweight: 39%
- Obese: 30%
The datasets we’re using today

<table>
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<tr>
<th>Year</th>
<th>Sample size</th>
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<tr>
<td>2003</td>
<td>16,062</td>
</tr>
<tr>
<td>2004</td>
<td>6,803</td>
</tr>
<tr>
<td>2005</td>
<td>7,795</td>
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Note: boost samples in 2004 and 2005 are excluded
Sample design

Sampling frame – Postcode address file

PSU – Postcodes (half of a ward in 2004)

PSU’s stratified by LA and within LA by the % of hh with a non-manual head of household (and by ethnicity in 2004)

Systematic sample of households drawn from each selected postcode

All adults in selected households interviewed. Up to 2 children aged 0-15 included in the survey
BMI variables in the HSE dataset

- **BMIOK** – Whether bmi measure is valid

- **BMI** – body mass index including non-valid heights and weights

- **BMIVAL** – body mass index excluding non-valid heights and weights
  - Height – persons height (cm)
  - Weight – persons weight (kg)

- **BMICAT** – whether obese or not
Socioeconomic variables

- The data includes a number of variables known to associated with bmi:
  - Age
  - Sex
  - Ethnicity
  - NSSEC – social class
  - Limiting long term illness
  - Qualifications
  - Car ownership
  - Marital status
Sampling variables

- There are three variables that give information on sampling design:
  1. Wt_int (weighting variable)
  2. Area (PSU variable)
  3. Cluster (Stratification variable)

- Non response/disproportionate sampling
- Standard errors – complex survey design
Thanks to Louisa Ellis from Durham University & colleagues from Teeside University for re-use of some of these slides. Go to www.noo.org.uk for latest obesity data.