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Cohort & Longitudinal Studies Enhancement Resources

CLOSER's resources for teaching and research

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MRC Medical Research Council

E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL

Session 1

- About CLOSER
- Focus on resources relevant to undergraduate and postgrad course leaders and lecturers
- Discussion: How can longitudinal research be embedded successfully into existing teaching provision?

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About CLOSER

- **Objective**: to maximise the use, value and impact of the UK's longitudinal studies
- **Consortium**: 8 longitudinal studies, the British Library and the UK Data Service
- **Funded** by the ESRC and the MRC

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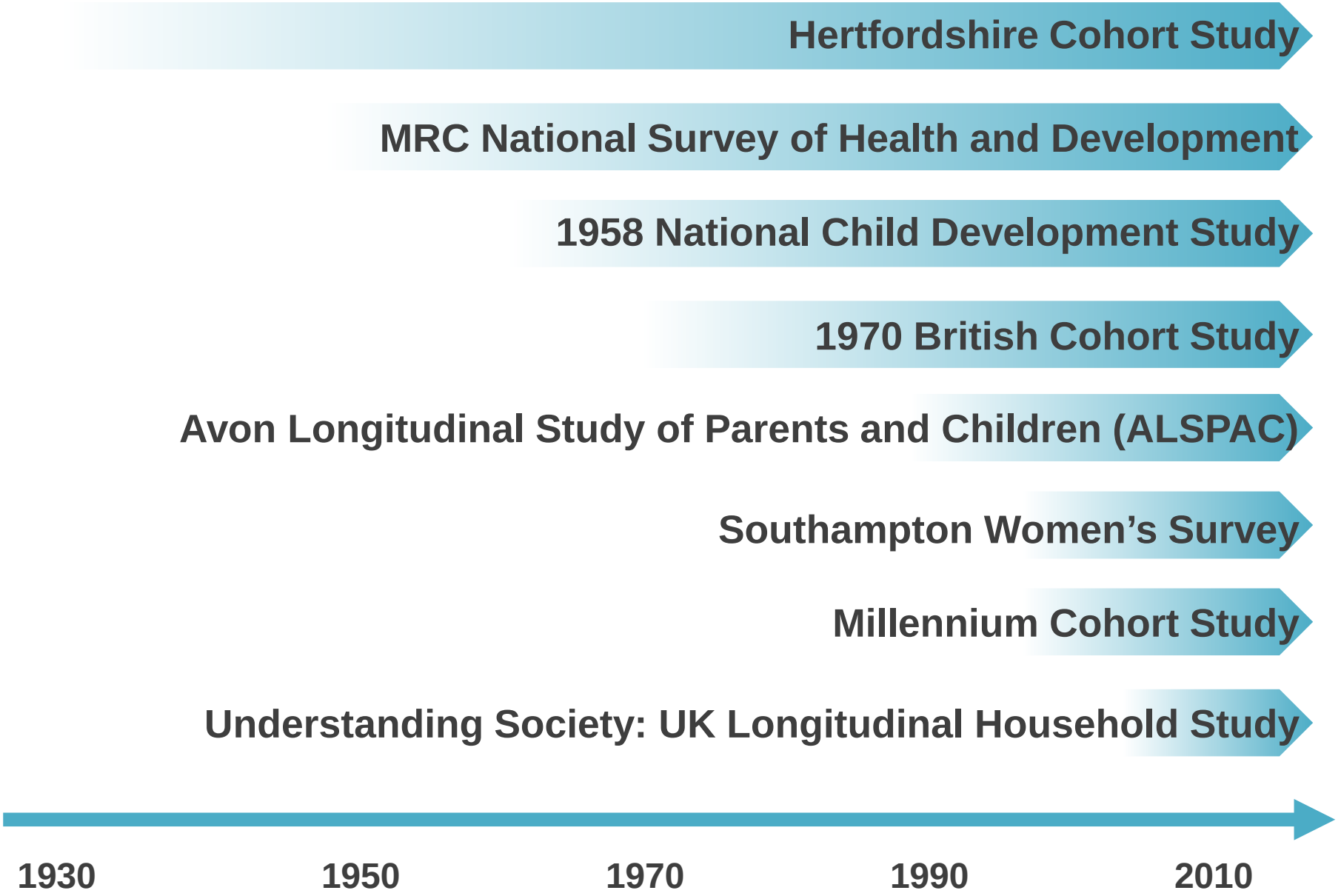
Hertfordshire Cohort Study
MRC National Survey of Health and Development
1958 National Child Development Study
1970 British Cohort Study
Avon Longitudinal Study of Parents and Children (ALSPAC)
Southampton Women's Survey
Millennium Cohort Study
Understanding Society: UK Longitudinal Household Study
1930
1950
1970
1990
2010

Key areas of CLOSER's work

- Guidance and exemplar studies on data harmonisation and data linkage
- Promoting value of longitudinal research
- Training and capacity building: Learning Hub
- Data discovery: CLOSER Discovery

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Main CLOSER website

Learning Hub

CLOSER Learning Hub

Rationale

- Need for materials aimed at beginners and less experienced data users, initially with academic focus
- Focus on methods & topics
- Easily discoverable and downloadable material to support teaching and supervision
- Showcases CLOSER & individual study resources

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Learning hub structure

- Introduction
- Evidence
- Study design
- Analysis
- Teaching dataset
- Explore by topic
- Glossary

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Learning Hub

Why use longitudinal data to study bullying?

Bullying isn't just a part of growing up – it can have a long-term negative impact on our lives.

Longitudinal studies track the same individuals and households over time. They are powerful research tools to help us understand how our early circumstances and experiences influence our later lives. The CLOSER Learning Hub has information and resources to help you explore longitudinal studies and get you started using the data.

- What are longitudinal studies? +
- Types of longitudinal studies +
- Strengths and weaknesses of longitudinal data +

Test your longitudinal knowledge

Question **1** of **5**

Longitudinal studies follow the same

Learning Hub

Introduction to longitudinal studies

Longitudinal studies track the same people throughout their lives, helping us understand how life in the UK is changing. In this module, you will learn the basics of longitudinal research – what the studies are, how they work, who they follow, and why we need them.

CHALLENGE LEVEL: easy

KEY CONCEPTS

- Content and coverage of longitudinal studies
- Longitudinal vs cross-sectional studies
- Who participates in a longitudinal study?
- Advantages and disadvantages of longitudinal data

1 What are longitudinal studies?

A longitudinal study is a observational study that follows the same subjects repeatedly over a period of time, in some cases from birth to death. The UK is home to the largest and longest-running collection of longitudinal studies in the world.

2 Types of longitudinal studies

There are a range of different types of longitudinal studies: cohort studies, panel studies, record linkage studies. These studies may be either prospective or retrospective in nature.

3 Using longitudinal data for research

Each time the studies collect new information about their participants' lives, they are adding rich new data to what is already known about them.

4 Test your knowledge

How much have you learned about longitudinal studies? When you have completed all the sections in this module, take the quiz to test how much you know.

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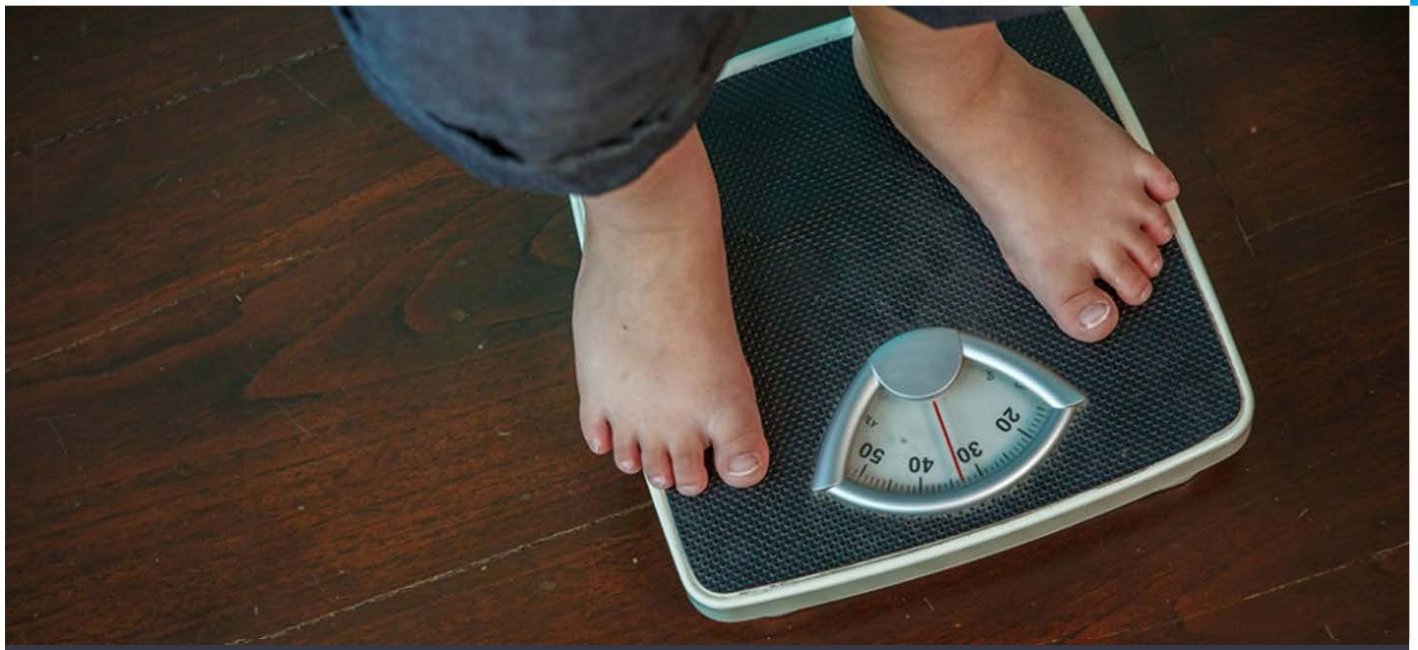
The rise of the obesity epidemic



Obesity presents a daunting public health challenge. Longitudinal research has helped pinpoint when the obesity epidemic in the UK emerged, and how weight gain over the life course has changed for different generations.

Key finding

Children born since 1990 are up to three times more likely than older generations to be overweight or obese by age 10.

About the research

Researchers from CLOSER analysed information on the height, weight and body mass index (BMI) of 56,632 people born in the UK from 1946 to 2001, who are being followed by the British birth cohort studies.

Children born since 1990 are up to three times more likely than older generations to be overweight or obese by age 10. This research is the first to track weight gain across multiple generations through much of their lives – from age 2 to 64 for the oldest participants.

Learning Hub

Study Design

Before using longitudinal data in your research, it is important to understand where the information comes from and how it was collected. This module provides a step-by-step overview of how longitudinal studies are designed, from the overall scientific objectives, to selecting a sample, to determining the most effective methods for collecting different types of information.

CHALLENGE LEVEL: intermediate

KEY CONCEPTS

- Prospective vs retrospective design
- Sampling
- The roles of different survey instruments
- Practicalities of data collection

1 The beginning: aims, objectives and feasibility

Scientists consider a range of factors when designing a longitudinal study. Many relate to the overall scientific purpose of the study, while others are more practical.

2 Sampling

All surveys rely on samples, which are selected from a group of interest (often referred to as the 'target population').

3 Data collection instruments

Each sweep of data collection for a longitudinal study covers a range of topics. This section looks at the different ways in which data is collected, and the tools used to capture information about different aspects of life.

4 Methods of data collection

Data collection instruments can be implemented in different ways. A key distinction is between different modes of data collection: face-to-face, telephone, postal or online.

Learning Hub

Analysis

Researchers use a range of methods to analyse longitudinal data. Methods of analysis often depend on the researcher's discipline. However, there are core analytical concepts that anyone using longitudinal data must grasp.

CHALLENGE LEVEL: advanced

KEY CONCEPTS

- Latent growth models
- Multilevel models
- Fixed effects models
- Generalised estimating equations

1 Analysis module

The Analysis module is currently being developed. The unit will cover different approaches to the analysis of longitudinal data, and will make use of the CLOSER teaching dataset. Approaches covered will include:

latent growth models
multilevel models
fixed effects models
generalised estimating equations

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Teaching dataset

CLOSER has developed a teaching dataset based on the 1958 National Child Development Study (NCDS). It will be available shortly via the UK Data Service.

1 Teaching dataset summary

CLOSER has developed a teaching dataset based on the 1958 National Child Development Study (NCDS). It is fully documented and will be available shortly via the UK Data Service.

The dataset includes variables from eight waves of the NCDS, from the first sweep in 1958, to the age 50 sweep in 2008. Variables in the dataset include:

personal and family background (respondent sex; parental education and class)
cognitive ability
education
marital status
employment status and social class
political participation
wellbeing
health indicators (including BMI, drinking and smoking)

The dataset will comprise respondents who have taken part in every sweep of the study (complete cases). A subsequent dataset will be prepared that includes respondents who have taken place in some but not all sweeps of the study, so students can learn how to deal with sweep-level missing cases.

The first dataset is being processed by the UK Data Service and a link will appear here once available in August 2017. The dataset with sweep-level missing cases will be available shortly afterwards.

Catalogue

UK Data Service data catalogue record for:

National Child Development Study: CLOSER Training Dataset, 1958-2013

Documentation | Publications | Syntax Download/Order | DDI XML

TITLE DETAILS

SN:	8205
Title:	National Child Development Study: CLOSER Training Dataset, 1958-2013
Persistent identifier:	10.5255/UKDA-SN-8205-1
Series:	CLOSER Training Datasets
Depositor:	Cohort and Longitudinal Studies Enhancement Resources
Principal investigator(s):	Cohort and Longitudinal Studies Enhancement Resources
Sponsor(s):	Economic and Social Research Council
Grant number:	ES/K000357/1

CITATION

The citation for this study is:

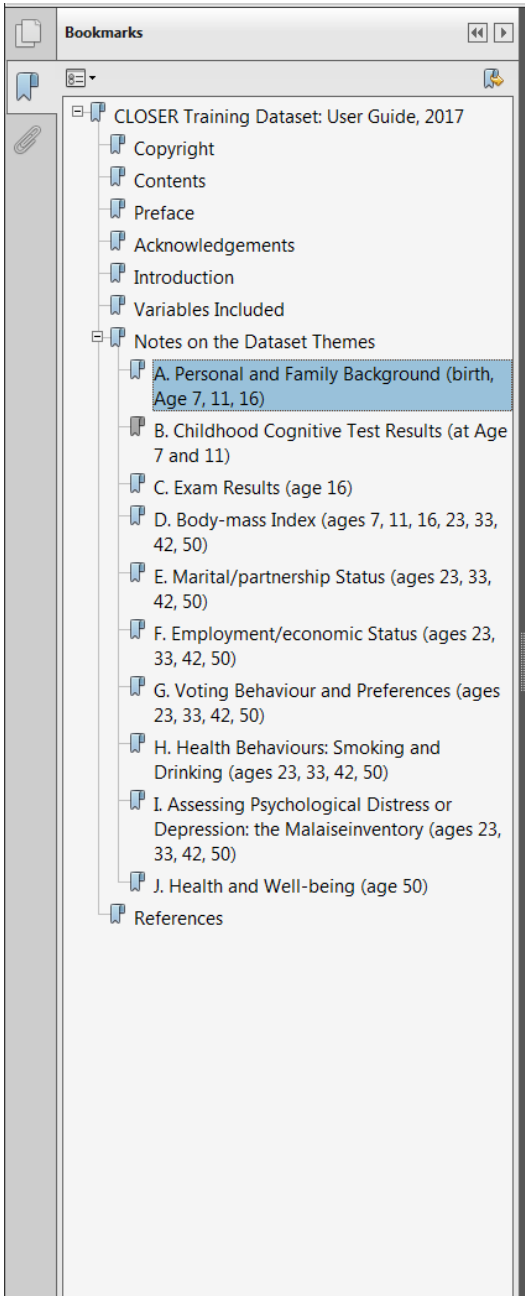
Cohort and Longitudinal Studies Enhancement Resources. (2017). *National Child Development Study: CLOSER Training Dataset, 1958-2013*. [data collection]. UK Data Service. SN: 8205, http://doi.org/10.5255/UKDA-SN-8205-1

Select the text above to add data citation in your outputs.

Select citation format: APA **XML citation formats:** CSL EndNote

SUBJECT CATEGORIES

Drug abuse, alcohol and smoking - Health
General - Education
General - Employment and labour
Mental health - Health
Political behaviour and attitudes - Politics
Social and occupational mobility - Social stratification and groupings
Social indicators and quality of life - Society and culture
Teaching packages and test datasets - Reference and instructional resources



Notes on the dataset themes

This section sets out the content of the dataset, by theme.

a. Personal and family background (birth, age 7, 11, 16)

Eight variables cover: sex, parental education level, parental social class and parental marital status.

Variable	Variable description
n622	Sex of cohort member
n545	0 Mother's marital status at birth of cohort member
n716dade	Father left education at min age or not [derived from age 7 and 16]
n16med	Exact age mother left full-time education [from age 16 q'aire]
n16fed	Exact age father left full-time education [from age 16 q'aire]
N2SRGSC	1990-style RG Social Class code for father's occupation 1969 (CM age 11)
n1171	2P 1970-style Social Class of father or male head at CM age 11 (1969)

b. Childhood cognitive test results (at age 7 and 11)

Test results from ages 7 and 11 are included: four from each age. Both ages contain the Copying Designs test, which is a perceptual test assessing how good the child is at copying certain shapes and patterns. At age 7 we also have the Draw-a-man Test[9], the Southgate Reading Test[10] and the Problem Arithmetic Test[11]. At age 11 we have James Douglas's General Ability Test[12], and two tests designed for NCDS by the National Foundation for Educational Research (NFER): the Reading Comprehension Test and the Arithmetic/Mathematics Test.

Variable	Variable description
n90	1T Problem Arithmetic Test score, CM age 7
n92	1T Southgate Group Reading Test score, CM age 7
n457	1S Total score on Copying Designs Test, CM age 7
n1840	1T Draw-a-man test score, CM age 7
n914	2T Verbal score on general ability test, CM age 11
n917	2T Non verbal score on gen ability test, CM age 11
n920	2T Total score on general ability test, CM age 11
n923	2T Reading comprehension test score, CM age 11
n926	2T Mathematics test score, CM age 11
n929	2T Copying designs test score, CM age 11

c. Exam results (age 16)

Details of NCDS members' exam results were obtained in 1978 by writing to schools that cohort members were known to have attended at the time of the age 16 follow-up (1974). The current GCSE system was not introduced until 1988,

Explore by topic

Information about how to use longitudinal data across sectors

- Bullying
- Health behaviours
- Mental health and wellbeing – Coming soon
- Social and political participation – Coming soon
- Social mobility – Coming soon

Why use longitudinal data to study bullying?

Young people, schools, parents and government are more aware of bullying than ever before. It is a very important topic of modern day policy, practice and academic inquiry.

But to make the strongest case for bullying, campaigners, practitioners and policymakers must prove that bullying isn't just a part of growing up – that it can have a long-term negative impact on young people's lives.

Longitudinal studies make a unique contribution to our understanding of bullying by tracking its effects right through the course of our lives. The data have been used to understand the long-term consequences of bullying, and if different groups are more resilient or susceptible to the damaging effects.

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Bullying

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Selected longitudinal evidence on bullying

Glossary

- Administrative data
- Attrition
- Cohort studies
- Conditioning
- Confounding
- Cross-sectional

  Cross-sectional surveys involve interviewing a fresh sample of people each time they are carried out. Some cross-sectional studies are repeated regularly and can include a large number of repeat questions (questions asked on each survey round).
- Data harmonisation
- Data linkage
- Household panel surveys
- Longitudinal studies
- Non-response bias
- Observational studies
- Panel studies
- Prospective study

Learning Hub

- Initial ‘soft’ launch, now looking at feedback and tweaking functionality
- Full promotion in October
- learning.closer.ac.uk

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Discussion

How can longitudinal research be embedded successfully into existing teaching provision?

- Where are the gaps in training provision?
- What are the challenges to filling them?
- What would help you include more about longitudinal research in your course/module?
- How would you envisage using the Learning Hub in teaching? What additional features would enhance it?

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Thank you

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