

Science and Technology Committee (Commons) inquiry: Evidence based early years intervention

Written evidence submitted by CLOSER (EYI0020)

1. Summary

- 1.1 Longitudinal studies follow the same people and households over time, often from birth, collecting a wide array of information about participants' lives. The studies provide unique insights about the dynamics of individual behaviour and the influence of early life circumstances on later life outcomes.
- 1.2 The UK's longitudinal studies are leading sources of evidence on how early circumstances and experiences affect people's lives from childhood to adulthood. They provide insights into individual short and long-term change and the relationship between different elements of people's lives that cannot be obtained from any other data sources. Birth cohort studies in particular are invaluable in this field as they allow us to understand the complex links between childhood experiences and their impact on long-term outcomes.
- 1.3 There is a wealth of existing data available in the UK's longitudinal studies to help uncover how specific adverse childhood experiences produce adverse impacts. Longitudinal evidence has demonstrated how being born into poverty or disadvantage can have lasting effects on health, education, employment and ageing. Factors such as maternal health during pregnancy, child birthweight, parental education and employment, family housing and socio-economic circumstances can have a lasting effect on children's cognitive, social and behavioural development.
- 1.4 Gaps in the evidence base are, in part, a result of not being able to link longitudinal survey data to administrative records to provide a more complete picture of participants' life stories and to better understand how different aspects of people's lives interrelate. There also needs to be more investment in cross-study (cross-cohort) comparisons which provide opportunities for understanding the influence of different contexts throughout life and across generations. The ability to compare findings from different longitudinal studies can only be achieved through harmonising survey variables, something which CLOSER has invested in heavily in order to unlock more value from these publicly-funded datasets for the benefit of the research and policy communities.
- 1.5 CLOSER, the UK longitudinal studies consortium, is a unique partnership that brings together biomedical and social longitudinal studies with participants born as early as the 1930s to the present day. There are currently eight studies in CLOSER: four national and three regional birth cohort studies and Understanding Society (the UK Household Longitudinal Study).

2. The longitudinal evidence

- 2.1 Over the course of 70 years, the UK's longitudinal studies have been a leading source of evidence on how our early lives continue to shape us as we grow up, and grow old. By tracking people from all walks of life, longitudinal studies have been able to identify the early life factors that influence later life outcomes and how far-reaching the effects of disadvantage can be. [1]
- 2.2 Findings from longitudinal studies show factors such as mother's health during pregnancy, child's birthweight, parents' education and employment, family's housing and socio-economic circumstances can have a lasting effect on children's cognitive, social and behavioural development. In particular, being born into poverty or disadvantage can have lasting effects on health, education, employment and ageing. The following are a selection of findings from the CLOSER studies:
- 2.3 Children who experience poverty in their early years are most at risk. Research using the 1970 British Cohort Study found that, even at 22 months, there is a significant gap in the development of children from different socio-economic groups, which widens over time. Findings from the Millennium Cohort Study show that by age five, children from more advantaged families were more than a year ahead in their vocabulary compared to those from disadvantaged backgrounds. [2]
- 2.4 Funded by CLOSER, researchers from the UCL Institute of Child Health looked at how early life factors influence visual function throughout life by tracing the visual function of more than 14,000 British adolescents born in 1946, 1958 and 1970. Analysis of data from three birth cohorts spanning 25 years suggests that disadvantaged social position at birth and during childhood were each associated with impaired visual function alongside, and independent of, ethnic minority status and being female. [3]
- 2.5 Poor cognitive ability as early as age three has been linked to an increased chance of unemployment, low qualifications and low income in adulthood. The 1958 National Child Development Study has found that supporting children in their early years can have long-lasting benefits – adults in this cohort who attended pre-school were more likely to go on to gain qualifications and get jobs. [4]
- 2.6 The 1946 National Survey of Health and Development was one of the first studies to show that infants who experienced lower respiratory illness and lived in overcrowded conditions went on to have worse respiratory health and lung functions as adults and that babies of lower birth weight had higher blood pressure in adult life. Findings have also shown that experience of good childhood circumstances significantly increased the chances of being in the best health at age 36 and those with a poor start to life were not able to make up the full health deficit. [5]
- 2.7 Research using the Avon Longitudinal Study of Parents and Children has demonstrated the transgenerational impact of trauma and the importance of nurturing mothers' mental wellbeing during and after pregnancy to ensure that their children get the best start in life. Mothers who had a difficult or traumatic upbringing are more likely to have children with

emotional and behavioural difficulties. Mothers with troubled childhoods were also significantly more likely to have a lower level of education, to have a psychiatric history, to drink and smoke more in pregnancy and to have lower social support. [6]

2.8 Research using Understanding Society has shed new insights into workless families and children's outcomes, particularly in terms of educational outcomes, and shown the profound negative impact that parents who are workless, and experiencing a range of associated problems, can have on children's chances of success. [7]

3. Gaps in the evidence base

3.1 The UK is unique in having very rich cohort data covering the entire age spectrum for a number of different cohorts. However there are evidence gaps which can be filled through utilising administrative data (by linking it to longitudinal survey data) and enabling cross-cohort comparisons.

3.2 In order to better understand how early life circumstances affect later outcomes it is helpful to be able to compare findings from different longitudinal studies, to show whether and how these relationships are changing across generations. However, these comparisons are complicated by the fact that different longitudinal studies have used different methods to collect information on important aspects of respondents' lives. For example, measures of household income and measures of some senses, such as vision, are collected in quite different ways both within the studies over time and crucially, across the separate studies.

3.3 CLOSER funds a number of work packages comprising of individual research projects that enable cross-study comparisons through our work on harmonisation and linkage between survey and administrative data. Data harmonisation involves recoding or modifying survey variables so that they are comparable across research studies. This is essential work which enables researchers to uncover links between adverse childhood experiences and long-term negative outcomes within and across generations. [8] [9]

3.4 In order to make full use of the longitudinal studies that we have in the UK, we need to be able to make comparisons both within and across studies. Repeating the same longitudinal analysis across a number of studies allows researchers to test whether results are consistent across studies, or differ in response to changing social conditions.

4. About CLOSER

4.1 CLOSER is a collaboration of UK social and biomedical longitudinal studies, the British Library and the UK Data Service, funded by the Economic and Social Research Council (ESRC) and Medical Research Council (MRC). [10]

4.2 There are currently eight studies in the CLOSER Partnership, comprising four national and three regional birth cohort studies and Understanding Society (the UK Household Longitudinal Study). [11]

4.3 CLOSER's mission is to maximise the use of longitudinal studies to help improve our understanding of key social and biomedical challenges, including how best to combat life threatening diseases, reduce obesity and improve social mobility and life chances.

4.4 CLOSER's main areas of work are data harmonisation, data linkage, training and capacity building, and promoting the value of longitudinal studies to a wide range of audiences.

5. About the CLOSER studies

5.1 The **Hertfordshire Cohort Study** comprises a nationally unique study of 3,000 men and women born during the period 1931-1939 and still resident in the English county of Hertfordshire during the 1990s. The principal objective of the study is to evaluate the relationship between early (prenatal and early postnatal) growth, genetic influences, adult lifestyle and the risk of common age-related disorders such as osteoporosis, osteoarthritis, sarcopenia, type 2 diabetes and cardiovascular disease. The study has been a key source of evidence for lifecourse influences on health and disease in later life.

5.2 The **1946 MRC National Survey of Health and Development** is the oldest and longest running of the British birth cohort studies comprising of men and women born in England, Scotland or Wales in March 1946. Today, with study members in their seventies, the study is a leading source of evidence on the long-term biological and social processes of ageing and how ageing is affected by factors acting across the whole of life.

5.3 The **1958 National Child Development Study** follows the lives of 17,415 people born in England, Scotland and Wales in a single week of 1958. It has tracked the lives of study members to reveal how the different educational and other paths people take affect their wages, jobs, relationships, and health later in life. It has also been used to uncover genetic risks for a range of diseases.

5.4 The **1970 British Cohort Study** follows the lives of 17,198 people born in England, Scotland and Wales in a single week of 1970. The study has shown the importance of reading for pleasure for children's cognitive development, especially in vocabulary and spelling, but also in maths.

5.5 The **Avon Longitudinal Study of Parents and Children** charts the lives of 14,500 people born in the former county of Avon between April 1991 and December 1992 as well as the lives of their parents and their children. It is rich resource for the study of the environmental and genetic factors that affect a person's health and development throughout their life.

5.6 The **Southampton Women's Survey** is the only birth cohort study in Europe in which the mothers were recruited before conception of the child. The aim of the study is to assess the influence of maternal dietary, lifestyle, intrauterine, genetic and epigenetic factors on the children's health and development, and on the health of the mothers themselves.

5.7 The **Millennium Cohort Study** follows the lives of 19,517 children born across England, Scotland, Wales and Northern Ireland in 2000-01. The study has provided important evidence

to show how circumstances in the early stages of life can influence later health and development, including that children who are breastfed tend to be healthier and to show better cognitive development and that children born in the summer months were more likely to be placed in lower ability groups than their autumn-born peers.

5.8 **Understanding Society:** The UK Household Longitudinal Study follows the lives of all individuals within 40,000 households over time. It covers the whole population, with boost samples to ensure it is representative of immigrant and ethnic minority groups, and its large sample enables sub-population groups to be examined. The study includes data on key domains of people's lives – their family, health, wellbeing, employment, education, income, expenditure, wealth, time use, behaviours, housing, transport and neighbourhoods, attitudes and beliefs – which enables researchers to investigate the inter-relations between different aspects of people's lives.

6. References

- [1] <https://www.closer.ac.uk/news-opinion/2016/the-life-project-helen-pearsons-history-of-the/>
- [2] <https://www.closer.ac.uk/news-opinion/2013/welsh-governments-early-years-childcare-plan-draws-evidence/>
- [3] <https://www.closer.ac.uk/news-opinion/2017/impaired-vision-increased-generations-teenagers-1960s-study-finds/>
- [4] <https://www.closer.ac.uk/news-opinion/2013/welsh-governments-early-years-childcare-plan-draws-evidence/>
- [5] <https://www.mrc.ac.uk/publications/browse/national-survey-of-health-and-development/>
- [6] <http://www.bristol.ac.uk/alspac/news/2017/mothers-and-troubled-childhoods.html>
- [6] <http://bjp.rcpsych.org/content/early/2017/07/15/bjp.bp.117.198721>
- [7] <https://blog.esrc.ac.uk/2017/04/19/disadvantage-and-worklessness-a-longitudinal-perspective/>
- [8] <https://www.closer.ac.uk/about/areas-work/data-linkage/>
- [9] <http://www.closer.ac.uk/about/areas-work/data-harmonisation/>
- [10] <https://www.closer.ac.uk/about/>
- [11] <https://www.closer.ac.uk/about/partners/>

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