

Annex A: Methodology

This note outlines the methodological approach taken in Money and Mental Health's 2024 report, *Always on your Mind: Preventing persistent money and mental health problems*, by Becca Stacey and Chris Lees.

A.1 Research design

This research project consisted of:

- A review of the academic and grey literature on longitudinal studies of money and mental health problems.
- Analysis of four waves (waves 9-12) of the Understanding Society dataset.
- Two surveys with Money and Mental Health's Research Community.
- An online focus group with members of Money and Mental Health's Research Community.
- An online roundtable attended by people working in mental health services, money and debt advice services and financial services.

Further details of each component of the research are provided below.

We are grateful to all those who supported this research by sharing their personal experience.

A.2 Literature review

Researchers completed a desk-based review of the existing academic and grey literature on longitudinal studies of money and mental health problems. This both allowed us to review the methodologies of similar projects to assess and draw on their design strengths, and also identify potential drivers of long-term money and mental health problems. We also conducted a review of the policy context, specifically the existing interventions that aim to provide timely support to people with money and mental health problems, which was used to inform the policy recommendations in the final section of the report.

A.3. Analysis of Understanding Society

Understanding Society, the UK Household Longitudinal Study, is a large, representative survey which started in 2009 and built on its predecessor the British Household Panel Survey which ran from 1991 - 2009.¹ Understanding Society respondents are interviewed approximately

¹ University of Essex, Institute for Social and Economic Research. (2023). Understanding Society: Waves 1-13, 2009-2022 and Harmonised BHPS: Waves 1-18, 1991-2009. 18th Edition. UK Data Service. SN: 6614, <http://doi.org/10.5255/UKDA-SN-6614-19>.

every 12 months, enabling researchers to look at changes in people's circumstances on an annual basis and over time.

We derived indicators of mental and financial difficulty from the Understanding Society dataset, to analyse what effect that experiencing these challenges persistently had on individuals. As outlined in our report, our definition of persistence was informed by the Department for Work and Pension's definition of persistent low income. This definition states that an individual is living in persistent low income if their household's equivalised income is less than 60% of median income for at least three out of the last four years.² We expanded this definition for our study such that if someone has experienced a mental health problem or an indicator of financial difficulty - such as being behind on bills - for three or more years over a four year period, they have experienced this challenge persistently.

While there is a lack of consensus in the mental health literature about what signifies a mental health problem as being persistent,³ it's important to note that our definition uses a relatively high threshold. Most studies that attempt to define severe and persistent mental health problems set the threshold at someone having experienced these difficulties for at least two years.⁴ And the government's definition of a long-term mental health condition under the Equality Act 2010, is if it lasts, or is likely to last, at least 12 months.⁵

Waves

Each set of annual interviews conducted as part of the Understanding Society survey are referred to as a wave.⁶ While there are 13 waves of the current UK Household Longitudinal Study to examine and 18 waves of its predecessor the British Households Panel Study, tracking money and mental health problems over a long period of time presents challenges. Specifically, the potential introduction of many other factors that naturally occur over time and can affect people's mental and financial health, besides these two triggers themselves. To try and limit the effect of these naturally occurring factors on our outcome of interest, we limited the period of time we looked at and focused on waves 9 to 12, which were published in 2019, 2020, 2021 and 2022 respectively. These were the most recent waves at the time of conducting this research and were felt to be most pertinent to the policy context.

²For more detail on this definition, please see the technical details accompanying the Department for Work and Pensions 'Income Dynamics: 2010 to 2021' data release
<https://www.gov.uk/government/statistics/income-dynamics-2010-to-2021>

³ Zumstein N, Riese F. Defining Severe and Persistent Mental Illness-A Pragmatic Utility Concept Analysis. *Front Psychiatry*. 2020 Jul 6; 11:648.

⁴ Zumstein N, Riese F. Defining Severe and Persistent Mental Illness-A Pragmatic Utility Concept Analysis. *Front Psychiatry*. 2020 Jul 6; 11:648.

⁵ UK Government. When a mental health condition becomes a disability.
<https://www.gov.uk/when-mental-health-condition-becomes-disability>

⁶ For more detail on the survey timeline see
<https://www.understandingsociety.ac.uk/documentation/mainstage/survey-timeline/>

Sample

Our sample included those who are prime working age - aged 25-54. This meant that we could more confidently identify the impact of mental health problems on people's employment status and income, as additional age-related factors like studying and retirement were less likely to be applicable to those in our sample.

In order to investigate the impact of experiencing mental and financial difficulties persistently in line with our definition, we needed to observe individuals at each of the four waves. Our sample, therefore, excluded anyone who didn't appear in all four waves, making it a balanced panel for analysis purposes.

Variables

We used and adapted the following Understanding Society variables as our independent and dependent variables:

- *Subjective wellbeing (Scghq2_dv)*. This variable measures subjective wellbeing and is based on the GHQ scale, ranging from 0 (the least distressed) to 12 (the most distressed). It is based on a set of questions asking respondents if they had recently experienced 12 symptoms relating to their subjective wellbeing, such as loss of sleep or losing confidence, if they answered rather or much more than usual for a symptom they were given a score of 1. We measured anyone who had a GHQ-12 score of 4 or higher as having a mental health problem, in line with common practice in the literature.⁷
- *Ability to manage financially (Finnow)*. This is a variable that asks 'How well would you say you yourself are managing financially these days?', with the response options ranging from 'Living comfortably' to 'Finding it very difficult.' We combined the responses 'finding it very difficult' and 'finding it quite difficult' to create our own 'struggling financially' variable, that classified respondents as struggling financially or not.
- *Employment status (Jbstat)*. This is a variable that asks people about their current employment situation, with values including paid employment to long-term sick or disabled.
- *Ability to keep up with bills (Xphsdba)*. This is a variable that asks 'Are you up to date with all your household bills such as electricity, gas, water rates, telephone and other bills or are you behind with any of them?', with the response options ranging from 'up to date with all bills' to 'behind with all bills'. We combined the responses 'behind with all bills' and 'behind with some bills' to create our own 'behind on bills' variable, that classified respondents as being behind on bills or not.

⁷ Kromydas T et al. Which is most important for mental health: Money, poverty, or paid work? A fixed-effects analysis of the UK Household Longitudinal Study. *SSM - Population Health* Volume 15, September 2021.

- *Total gross monthly personal income (Fimngrs_dv)*. This is a derived variable that includes a respondent's total monthly labour income, total income from benefits and income from savings and investments. We used the Office for National Statistics's Consumer Prices Index including owner occupiers' housing costs (CPIH) figures to adjust figures in line with inflation. Figures correspond to January 2024 prices.

Descriptive analysis

To reduce the impact of unobserved heterogeneity - unobserved factors or characteristics that influence the outcomes but are not explicitly accounted for in the models, no-one in our sample had experienced the predictor variable of interest in the wave before our four wave period. In our case, wave 8. So, for example, if we are interested in how having a mental health problem over waves 9-12 impacted people's ability to keep up with bills in wave 12, our sample would only include individuals who *did not* experience a mental health problem in wave 8.

We then analysed how the probability of an individual experiencing this outcome varied, depending on if and for how long they experienced our predictor variable. And in particular, whether they had experienced that predictor variable persistently (for 3 or more waves across the four wave period), for 2 waves or less, or not at all.

We weighted our analysis using the weight *indscui_lw*. This was the appropriate weight to use given that we are following individuals aged 16 and older who completed the self-completion Understanding Society questionnaire.⁸

Logistic regression

Again, to reduce the impact of unobserved heterogeneity when conducting our logistic regressions, no-one in our sample had experienced the predictor variable of interest in wave 8.

We then created various binary outcome variables of interest, for example whether someone had a mental health problem or not, was in financial difficulty or not, was out of work due to illness or disability or not and was behind on bills or not. Our main outcome of interest was whether an individual was experiencing these challenges in wave 12.

We ran a logistic regression to determine the association between the outcome of interest, and if and for how long someone had struggled with their mental and financial health in the previous waves - our predictor variables. In particular, whether they had experienced these challenges persistently (for 3 or more waves across the four wave period), for 2 waves or less, or not at all. As well as allowing us to analyse the effect of experiencing these negative events for a longer period of time, these logistic regressions also allowed us to test the strength of this relationship.

⁸

<https://www.understandingsociety.ac.uk/documentation/mainstage/user-guides/main-survey-user-guide/selecting-the-correct-weight-for-your-analysis/>

Our methodological approach does not address the endogeneity between the variables of interest. Specifically, the potential for hidden connections between our mental and financial health variables which can make it harder to determine the true relationship between them.

The estimated coefficients are reported as odds ratios. These communicate the odds that the negative outcome variable will occur depending on how persistently someone experienced the negative predictor variable, compared to the odds of the outcome occurring in the absence of experiencing that negative predictor variable.

All reported logistic regression coefficients are statistically significant at the 5% level unless specified otherwise.

We also controlled for the following in our regressions:

- Age
- Sex
- Ethnicity
- And whether someone lives with someone else in a household as a couple

We weighted our analysis using *indscui_lw*.

A.4. Research Community surveys

From the 7th to the 21st of July 2023, we carried out two surveys with members of our Research Community, a group of nearly 5,000 people with lived experience of mental health problems or caring for someone with mental health problems. We received responses from 423 people who have personally experienced a mental health problem and responses from 68 people who care for someone who does. These surveys asked people about if and how their experiences with money and mental health problems had changed over time, and what factors had driven longer-term experiences.

All questions were optional to avoid causing distress to participants, meaning the base size for questions varies. Where necessary, we also routed questions to avoid asking questions that were not relevant to a participant's experiences.

Where statistics from this survey are quoted in this report, we also provide sample size and a description of the base. This survey also contained several qualitative questions, which were analysed thematically and used to highlight trends identified in analysis of Understanding Society by providing illustrative examples of people's experiences.

A.5. Research Community focus group

Using the Research Community survey as a sampling tool, we held an online focus group on the 26th of September 2023 with six participants who had lived experience of long-term money

and mental health problems. All focus group participants were offered a £35 voucher as a thank you for taking part. This provided us with the opportunity to dig more deeply into:

- the factors that had led to longer-term money and mental health problems;
- the actions individual services could have taken to help break this cycle;
- and how different organisations could have also worked together to join up support and provide more timely and effective interventions.

A written transcript of the focus group was thematically coded. Emerging themes were used to understand people's experiences, and used to inform policy recommendations, ensuring our recommendations were grounded in experience and practice.

A.6. Roundtable

To generate ideas and test our emerging thinking, we held an online roundtable on the 23rd of November 2023 with people working in mental health services, money and debt advice services and financial services. This investigated how these different services currently work together to support people with money and mental health problems, and how more joined-up working across these sources of support could be achieved.