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**University of Southampton**

Faculty of Environmental and Life Sciences

School of Psychology

**Financial Hardship and Mental Health: A review of this relationship during the COVID-19 pandemic and an exploration of the roles of compassion, self-criticism and self-reassurance**

by

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Thesis for the degree of Doctorate in Clinical Psychology

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# University of Southampton

## Abstract

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### Thesis for the degree of Doctorate in Clinical Psychology

Financial Hardship and Mental Health: A review of this relationship during the COVID-19 pandemic and an exploration of the role of compassion, self-criticism and self-reassurance

by

Samantha Ruth Ashworth

A review of the literature investigating the relationship between financial changes due to COVID-19 and mental health was conducted. The review sought to synthesise the existing evidence from longitudinal quantitative studies which have examined the effect of changes in individuals' financial situations due to COVID-19 on mental health. Three databases (PsycINFO, MEDLINE, Web of Science) were searched for studies examining the impact of COVID-19-related financial changes on mental health outcomes. Study screening, quality assessment and data extraction was conducted. The majority of included studies were of fair methodological quality. Overall, this review demonstrates that the COVID-19 pandemic increased objective economic impact, financial hardship and subjective financial stress. These adverse changes in people's financial circumstances due to COVID-19, are associated with worsening mental health outcomes, including anxiety, depression, affect, global mental health and psychological distress.

In a longitudinal study, the psychological factors of compassion, self-criticism and self-reassurance were explored for their impact on the relationship between financial hardship and mental health. Participants completed measures of financial hardship, the psychological factors and measures of mental health initially and then repeated measures of financial hardship and mental health, three months later. Hierarchical regression analyses indicated that objective financial hardship significantly predicted mental health outcomes. Mediation analyses demonstrated that fears of *compassion from others* partially mediated the relationships between objective financial hardship and anxiety, depressive symptoms, stress and suicide cognitions. Fears of *compassion to self* partially mediated the relationships between objective financial hardship and depressive symptoms, stress and suicide cognitions, but not anxiety. Fears of *compassion to others* did not mediate this relationship. *Self-criticism* and *self-reassurance* both partially mediated the relationship between objective financial hardship and anxiety, depressive symptoms, stress and suicide cognitions.

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## Research Thesis: Declaration of Authorship

Print name: Samantha Ruth Ashworth

Title of thesis: Financial Hardship and Mental Health: **A** review of this relationship during the COVID-19 pandemic and an exploration of the role of compassion, self-criticism and self-reassurance

I declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission

Signature: ..... Date: 04/10/23.....

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## Definitions and Abbreviations

|               |  |
|---------------|--|
| ACT .....     | Acceptance and Commitment Therapy                                  |
| BDI .....     | Beck Depression Inventory  |
| BSCS .....    | Brief Suicide Cognitions Scale                                     |
| CFT .....     | Compassion Focused Therapy   |
| EHQ .....     | Economic Hardship Questionnaire                                    |
| ERGO .....    | Ethics and Research Governance Online                              |
| FCS .....     | Fears of Compassion Scale  |
| FSCRS.....    | Forms of Self-Criticising Attacking and Self-Reassuring Scale      |
| GAD .....     | Generalised Anxiety Disorder                                       |
| GP-CORE ..... | Clinical Outcomes Routine Evaluation- General Population Version   |
| HADS .....    | Hospital Anxiety and Depression Scale                              |
| IFDFW .....   | InCharge Financial Distress/Financial Well-Being Scale             |
| LLCI .....    | Lower Limit Confidence Interval                                    |
| N/A .....     | Not Applicable   |
| PANAS .....   | Positive and Negative Affect Schedule                              |
| PHQ .....     | Patient Health Questionnaire                                       |
| PIFS .....    | Psychological Inventory of Financial Scarcity                      |
| PRISMA .....  | Preferred Reporting Items for Systematic Reviews and Meta-Analysis |
| PROMIS .....  | Patient-Reported Outcomes Measurement Information System           |
| PSS .....     | Perceived Stress Scale   |
| SC .....      | Self-Criticism   |
| SD.....       | Standard Deviation   |
| SPSS .....    | Statistical Package for the Social Sciences                        |

STAI ..... State-Trait Anxiety Inventory  
ULCI..... Upper Limit Confidence Interval

# **Chapter 1 Literature Review: A review of the psychological impact of financial disruption due to COVID-19**

## **1.1 Introduction**

### **1.1.1 Financial difficulties and mental health**

An established and expanding body of research has focused on the relationship between economic concepts, such as 'socioeconomic status' (SES) and unemployment, and mental health. Whilst early research focused broadly on SES and mental health, recent research has focused on the specific socio-economic variables. For example, research shows that financial hardship is a stronger predictor of depression than other socioeconomic variables such as educational attainment and household income while controlling for differences in household demographic composition, size and subsequent financial requirements (Butterworth et al., 2012).

Asper et al. (2022) assessed the impact of the COVID-19 pandemic, and previous pandemics, epidemics and the 2008 economic crisis, on mental health. Asper et al. (2022) examined 84 studies pertaining to the 2008 economic crisis and found that socioeconomic factors and unemployment had negative effects on mental health, including an increase in affective disorders. Furthermore, this review identified that the main risk factors mediating the effects of the 2008 economic crisis on poor mental health included unemployment, indebtedness, precarious working conditions, inequalities, housing instability and lack of social connectedness (Asper et al., 2022). Martin-Carrasco et al. (2016) found that whilst the effects of economic crises most negatively impacted individuals who were considered poor, less educated, or unemployed, these effects also affected the general population and individuals in employment. This indicates that the negative impact on mental health was experienced widely by diverse groups (Martin-Carrasco et al., 2016).

### **1.1.2 COVID-19 pandemic**

The World Health Organization (WHO) declared that the novel coronavirus (COVID-19) outbreak had reached global pandemic status on 11 March 2020. Over three years later, on 5 March 2023, the WHO announced that COVID-19 no longer constituted a public health emergency of international concern (PHEIC). This pandemic drastically altered people's lives and has had profound

consequences on society in terms of physical health, mental health, and the economy. From research regarding previous pandemics, such as that of the Severe Acute Respiratory Syndrome (SARS, 2002–2003), it is understood that the diverse and far-reaching effects of pandemics are likely to endure beyond the period of the pandemic (Simonse et al., 2022). Researchers exploring the effects of the COVID-19 pandemic on mental health have suggested three routes by which the pandemic may influence mental health, namely: the disease itself, subsequent imposed quarantine measures, and the economic consequences of the pandemic.

### **1.1.3 Aims of the review**

Since the COVID-19 pandemic, several systematic reviews examining the psychological impact of the this pandemic have been published. However, to our knowledge, a systematic review specifically investigating the relationship between financial changes due to COVID-19 and mental health has not yet been conducted. As COVID-19 has caused significant detrimental economic consequences, on individual, community, and wider societal levels, and given the established association between financial hardship and mental health difficulties, it is imperative that this specific area is examined and understood in order to inform local and national policy and intervention, resource and support planning. Thus, the objective of this literature review is to synthesise the existing evidence from longitudinal quantitative studies which have examined the effect of changes in individuals' financial situations due to COVID-19 on mental health. In doing so, this review and narrative synthesis will aim to answer the question: 'what is the impact of financial changes due to COVID-19 on mental health?'. The review protocol was prospectively registered on Prospero (Prospero reference: CRD42023400004). Registration was completed prior to conducting searches of the included databases.

## **1.2 Method**

### **1.2.1 Databases and search terms**

The methods and results of this review were informed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2010).

Three electronic databases, Web of Science, Medline and PsycINFO, were searched in March 2023. The following search terms were used to search all fields: (poverty OR "financ\* difficult\*" OR

“financ\* hardship” OR debt OR “financial stress” OR income) AND (COVID\* OR coronavirus OR SARS-CoV\* OR “severe acute respiratory syndrome coronavirus\*”) AND (“mental health” OR “mental illness” OR “mental disorder” OR depression OR anxiety OR stress OR distress OR "psychological disorder" OR "psychological wellbeing" OR "psychological well-being"). A librarian was consulted on the use of Boolean operators, truncation and proximity searching, to refine the search strategy. The following limiters were set for all searches: scholarly (peer reviewed) journals published between March 2020 and March 2023. The age limiter was set to include studies related to adults (18+years) only. Language was restricted to the English language due to time and translation constraints.

### **1.2.2 Inclusion and exclusion criteria**

Papers were included in the review if they were original quantitative studies, used a longitudinal design, and examined the relationship between mental health and financial changes due to COVID-19. Papers had to have been written in English and published in a peer-reviewed journal. Thus, reviews, meta-analyses and commentaries/letters were not included. Studies were excluded if participants were under the age of 18. For the purposes of this review, financial changes were defined as any changes in individuals’ financial situations caused by the COVID-19 pandemic, including objective financial changes (e.g., reduced income) and subjective financial stress or worry (e.g., concern over debt repayment). Financial changes due to COVID-19 must have been explicitly measured by a minimum of one question regarding financial situation (e.g., ‘over the last 2 weeks, to what extent have you experienced financial distress related to COVID-19?’). Studies which investigated job loss without specified financial changes were not included because several countries’ governments subsidised wages during the COVID-19 pandemic. An example of this is the UK government’s Coronavirus Job Retention Scheme (CJRS), also known as the Furlough Scheme. Inclusion of such studies may have invalidated the findings of this review. Inclusion required that mental health be considered using a standardised measure, preferably the full measure but shortened versions used in previous research with demonstrated validity and reliability were also included.

### **1.2.3 Search procedure**

The online software Rayyan (Ouzzani et al., 2016) was used to conduct the screening process. Titles of papers were initially screened against the inclusion and exclusion criteria. Following this, the



abstracts of papers which had not been excluded during title-screening were reviewed against the inclusion and exclusion criteria. The papers accepted following abstract-review were assessed for eligibility at the full-paper level. A record was kept of the reasons for rejection. One main reason for rejection was noted and if there were multiple reasons, then the paper was classed as 'multiple reasons'. For abstract and full paper review, the most prevalent reasons for rejection included: multiple reasons, no financial measure, no standardised mental health measure and the relationship between COVID-19 financial changes and mental health not being measured. Due to the large volume of studies identified in the initial search and time constraints, a second reviewer screened a randomly selected 10% of the studies at abstract stage (as recommended by Boland, Cherry, & Dickson, 2017). A third reviewer was available to discuss any disagreements and uncertainties if needed but these were sufficiently resolved through discussion between the two reviewers. The inter-rater reliability was calculated via Cohen's kappa, and there was 'substantial' agreement between the two reviewers' decisions ( $\kappa = .830$ ). Finally, a citation search was performed for all included papers. This yielded an additional 715 papers, of which 627 were rejected at title-screening and 46 at abstract-screening. This left 42 papers eligible for full-paper review and from this, six met the full inclusion criteria and were included in the review.

#### **1.2.4 Data extraction and analysis**

Relevant information from each paper was extracted including: author(s), publication date, study design, objective, ethical approval, study period and associated COVID-19 phase, country/region, population description, sample size, recruitment strategy, informed consent, study inclusion and exclusion criteria, data collection method, longitudinal timeline, mental health measure(s) used, measure of financial situation change, statistical analysis completed, key results, and key conclusions. A narrative synthesis was then conducted, informed by guidance developed by the Cochrane Consumers and Communication Review Group (Ryan, R., 2013) and the Synthesis Without Meta-analysis (SWiM) reporting guideline (Mhairi et al., 2020).

### **1.3 Results**

#### **1.3.1 Results of the searches**

Figure 1 shows the PRISMA flow diagram for this systematic search. The database searches yielded a total of 1935 papers. Of these, 383 abstracts were screened and 121 full papers were reviewed. A

further 715 papers were retrieved by hand and citation searching. Of these, 88 abstracts were screened and 42 papers were reviewed. The hand search yielded an additional 6 papers, resulting in a total of 16 papers reporting on 17 studies to be reviewed. At the title review stage, the majority of papers were rejected due to being irrelevant. This was possibly due to the broad range of search terms and given that research regarding the COVID-19 pandemic has been rapidly conducted and published. Papers were also commonly rejected for having met one or more of the exclusion criteria, including: qualitative study design, not examining a measure of personal financial change due to COVID-19, not considering mental health variables and including participants under the age of 18.

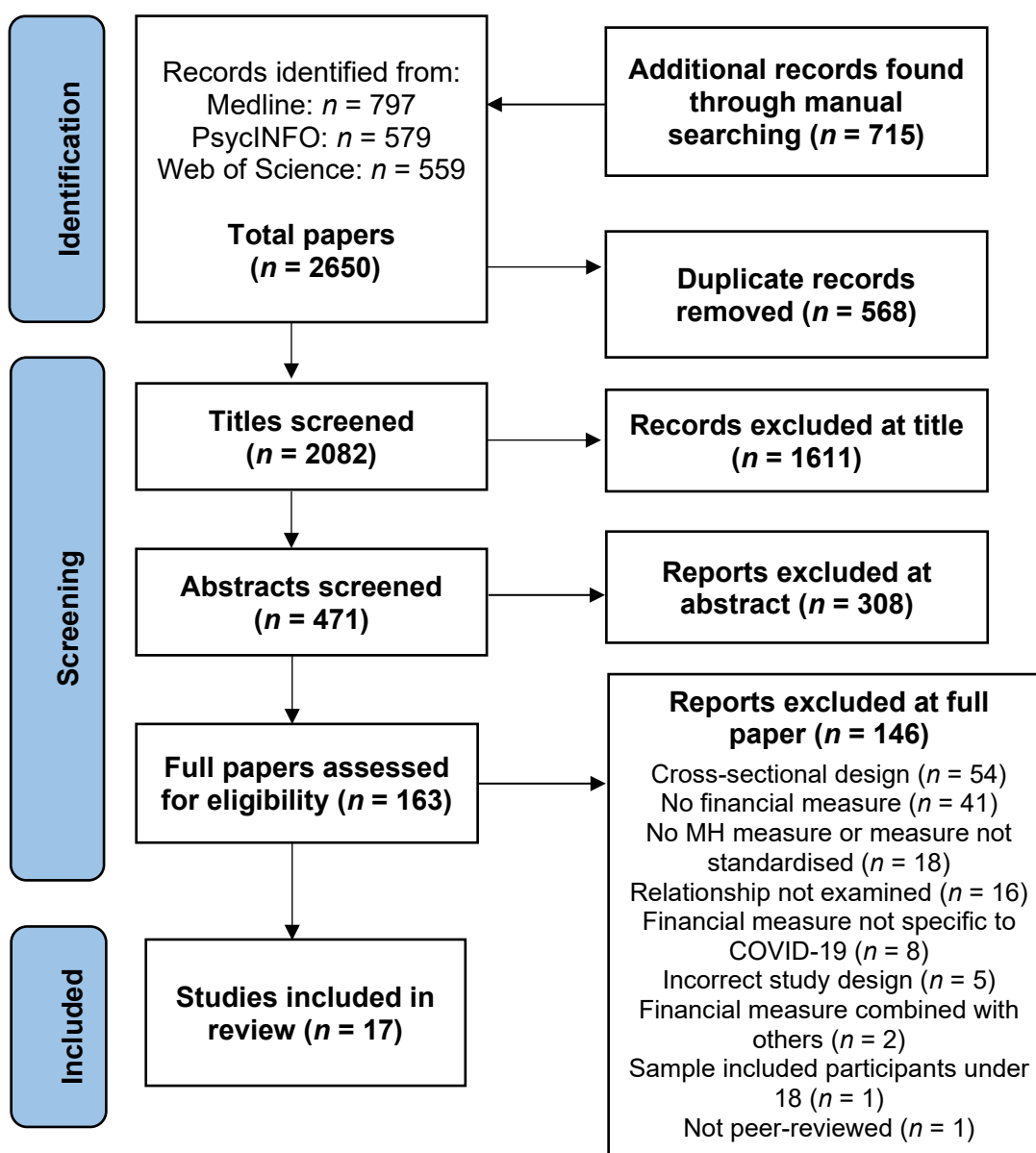


Figure 1 PRISMA flow diagram

At the abstract and full paper review stages, papers were most frequently rejected for not using a longitudinal design, not including a measure of financial changes due to COVID-19, not assessing mental health using a standardised measure, and not examining the relationship between financial change and mental health.

### 1.3.2 Quality assessment

Following the guidelines developed by Ryan, R (2013) and the PRISMA 2020 statement, the internal validity and risk of potential bias of the included studies was assessed (Page et al. 2021). The Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies was used as its criteria were deemed to be relevant to the studies included in this review (National Heart, Lung, and Blood Institute, 2014). This quality assessment tool consists of 14 questions covering a range of areas including the study design, participant recruitment and follow-up rate, exposure and outcome variables and the suitability of statistical analyses conducted. Each question is rated based on whether the question criteria is met ('yes' or 'no') and questions not applicable to the study design are marked as 'NA'. If not clearly met or not met, question criteria are rated as 'cannot be determined' ('CD') or 'not reported' ('NR') as appropriate. This quality assessment tool has not been designed to provide a calculable score of overall quality, but to elicit the key concepts for evaluating the internal validity of a study (National Heart, Lung, and Blood Institute, 2014). Instead, the tool guidelines indicate that these ratings be used to consider the risk of potential for selection bias, information bias, measurement bias, or confounding to determine the ability of the study to draw associative conclusions about the effects of the exposures being studied on outcomes (National Heart, Lung, and Blood Institute, 2014). Of the 17 studies included, six studies were rated as good, seven as fair, and four as poor (see Table 1). One of these studies (Canet-Juric et al., 2020) was assessed as having an insufficient timeframe in which an association could be reasonably observed and another study (Baranov et al., 2022) was assessed to have an independent variable (financial changes due to COVID-19) which was not clearly defined or valid or reliable. All studies assessed financial changes due to COVID-19 at the same time as mental health outcomes were measured, not before. Four of the 17 studies (Bierman et al., 2021; Graupensberger et al., 2022; Shuster et al., 2021; Simonse et al., 2022) assessed financial changes due to COVID-19 more than once. Three studies (Badellino et al., 2021; Canet-Juric et al., 2020; Feter Et al., 2020) did not control for key

potential confounding variables in statistical analyses. All studies were included in the review regardless of their quality rating and the implications of this are considered in the discussion.

### 1.3.3 Study characteristics

Appendix A includes a summary of data extracted, including study time period and contemporaneous or subsequent COVID-19 restrictions, sample, mental health variable(s), assessment of financial change due to COVID-19, main relevant findings and the overall quality assessment rating. Studies were conducted across a number of countries. Three studies were conducted in the USA (Choi et al., 2023; Graupensberger et al., 2022; Shuster et al., 2021), two in Argentina (Badellino et al., 2021; Canet-Juric et al., 2020) and two in Southern Brazil (Feter et al., 2021; Murray et al., 2023). One included study was conducted in each of the following countries: Australia (Batterham et al., 2021), Canada (Bierman et al., 2021), Denmark (Strizzi et al., 2023), Germany (Weber et al., 2023), Israel (Hertz-Palmor et al., 2021 [study 2]), Netherlands (Simonse et al., 2022), Norway (Hagen et al., 2023), Pakistan (Baranov et al., 2022), and Singapore (Lee et al., 2022). There was one international study of which the majority of participants were recruited from the US and Israel (Hertz-Palmor et al., 2021 [study 1]). In terms of longitudinal study design, the majority were prospective but one study was ambispective (Feter et al., 2021), requiring participants to initially retrospectively complete measures of pre-pandemic mental health by considering the period before the onset of the COVID-19 pandemic and then prospectively complete measures of mental health during the COVID-19 pandemic.

Eleven studies recruited general adult population samples (Badellino et al., 2021; Batterham et al., 2021; Bierman et al., 2021; Canet-Juric et al., 2020; Feter et al., 2021; Hagen et al., 2023; Hertz-Palmor et al., 2021; Shuster et al., 2021; Simonse et al., 2022; Strizzi et al., 2023; Weber et al., 2023). The remaining six studies recruited specific populations, two recruited parents (Murray et al., 2023; Baranov et al., 2022; ), two recruited middle- and older-aged adults (Choi et al., 2023; Lee et al., 2022), one recruited young adults (Graupensberger et al., 2022) and one recruited adults who were working at the time baseline measures were completed (Bierman et al., 2021).

The majority of studies ( $n = 13$ ) commenced data collection in 2020. Of these, most collected data in the first few months of the pandemic, between March and June 2020. In terms of COVID-19, this was a time of significant uncertainty, increasing cases and increasing COVID-19-related deaths, with local and national restrictions being placed worldwide. The remaining of the studies which began in 2020, continued to collect data in 2021 and 2022, meaning that these studies collected data during the

easing of lockdown periods and following the introduction of vaccinations against COVID-19. Finally, four studies began earlier in the pre-pandemic phase, between 2015 and 2018, and ended between May 2020 and March 2021. These studies utilised a variety of data collection periods, from 12-15 days between surveys and surveys administered over 5 years. Most studies were conducted over 2-6 months.

**Table 1. Study quality ratings using the Quality Assessment Tool for Observational Cohort and Cross-sectional Studies (NHLBI, 2014)**

|                               | 1.<br>Research<br>question<br>clearly<br>stated | 2.<br>Study<br>pop. | 3.<br>Part.<br>rate | 4.<br>Uniform<br>sample | 5.<br>Sample<br>size | 6.<br>Exposure<br>assessed<br>pre-<br>outcome | 7.<br>Sufficient<br>time-<br>frame | 8.<br>Different<br>exposure<br>levels | 9.<br>Exposure<br>measures | 10.<br>Repeated<br>exposure<br>assessment | 11.<br>Outcome<br>measures | 12.<br>Blinding | 13.<br>Follow-<br>up<br>rate | 14.<br>Statistical<br>analyses | 15.<br>Overall<br>rating |
|-------------------------------|---|---------------------|---------------------|-------------------------|----------------------|---|------------------------------------|---------------------------------------|----------------------------|---|----------------------------|-----------------|------------------------------|--------------------------------|--------------------------|
| Badellino et al. (2021)       | Yes   | Yes                 | NR                  | No                      | No                   | No  | Yes                                | Yes                                   | Yes                        | No  | Yes                        | NA              | No                           | No                             | Poor                     |
| Baranov et al. (2022)         | Yes   | Yes                 | Yes                 | Yes                     | No                   | No  | Yes                                | No                                    | No                         | No  | Yes                        | NA              | Yes                          | Yes                            | Fair                     |
| Batterham et al. (2021)       | Yes   | Yes                 | NR                  | Yes                     | Yes                  | No  | Yes                                | Yes                                   | Yes                        | No  | Yes                        | NA              | No                           | Yes                            | Fair                     |
| Bierman et al. (2021)         | Yes   | Yes                 | NR                  | Yes                     | No                   | No  | Yes                                | Yes                                   | Yes                        | Yes                                       | Yes                        | NA              | No                           | Yes                            | Good                     |
| Canet-Juric et al. (2020)     | Yes   | Yes                 | NR                  | Yes                     | No                   | No  | No                                 | Yes                                   | Yes                        | No  | Yes                        | NA              | NR                           | No                             | Poor                     |
| Choi et al. (2023)            | Yes   | Yes                 | NR                  | Yes                     | No                   | No  | Yes                                | Yes                                   | Yes                        | No  | Yes                        | NA              | NR                           | Yes                            | Good                     |
| Feter Et al. (20201)          | Yes   | Yes                 | NR                  | Yes                     | Yes                  | No  | Yes                                | No                                    | Yes                        | No  | Yes                        | NA              | Yes                          | No                             | Fair                     |
| Graupens-berger et al. (2022) | Yes   | Yes                 | Yes                 | Yes                     | No                   | No  | Yes                                | Yes                                   | Yes                        | Yes                                       | Yes                        | Yes             | Yes                          | Yes                            | Good                     |
| Hagen et al. (2023)           | Yes   | Yes                 | NR                  | No                      | No                   | No  | Yes                                | No                                    | Yes                        | No  | Yes                        | NA              | No                           | Yes                            | Poor                     |

|   | 1.<br>Research<br>question<br>clearly<br>stated | 2.<br>Study<br>pop. | 3.<br>Part.<br>rate | 4.<br>Uniform<br>sample | 5.<br>Sample<br>size | 6.<br>Exposure<br>assessed<br>pre-<br>outcome | 7.<br>Sufficient<br>time-<br>frame | 8.<br>Different<br>exposure<br>levels | 9.<br>Exposure<br>measures | 10.<br>Repeated<br>exposure<br>assessment | 11.<br>Outcome<br>measures | 12.<br>Blinding | 13.<br>Follow-<br>up<br>rate | 14.<br>Statistical<br>analyses | 15.<br>Overall<br>rating |
|---|---|---------------------|---------------------|-------------------------|----------------------|---|------------------------------------|---------------------------------------|----------------------------|---|----------------------------|-----------------|------------------------------|--------------------------------|--------------------------|
| Hertz-<br>Palmor<br>et al.(2021)<br>(study 1) | No  | Yes                 | NR                  | Yes                     | No                   | No  | Yes                                | Yes                                   | Yes                        | No  | Yes                        | NA              | No                           | Yes                            | Fair                     |
| Hertz-<br>Palmor<br>et al.(2021)<br>(study 2) | No  | Yes                 | NR                  | Yes                     | No                   | No  | Yes                                | Yes                                   | Yes                        | No  | Yes                        | NA              | No                           | Yes                            | Fair                     |
| Lee et al.<br>(2022)                          | Yes   | Yes                 | Yes                 | Yes                     | No                   | No  | Yes                                | Yes                                   | Yes                        | No  | Yes                        | NA              | NR                           | Yes                            | Good                     |
| Murray et<br>al. (2023)                       | Yes   | Yes                 | Yes                 | Yes                     | No                   | No  | Yes                                | Yes                                   | Yes                        | No  | Yes                        | NA              | Yes                          | Yes                            | Good                     |
| Shuster et<br>al. (2021)                      | Yes   | Yes                 | NR                  | No                      | No                   | No  | Yes                                | Yes                                   | Yes                        | Yes                                       | Yes                        | NA              | No                           | Yes                            | Fair                     |
| Simonse et<br>al. (2022)                      | Yes   | Yes                 | NR                  | Yes                     | No                   | No  | Yes                                | Yes                                   | Yes                        | Yes                                       | Yes                        | NA              | No                           | Yes                            | Good                     |
| Strizzi et al.<br>(2023)                      | Yes   | Yes                 | No                  | Yes                     | No                   | No  | Yes                                | Yes                                   | Yes                        | No  | Yes                        | NA              | No                           | Yes                            | Fair                     |
| Weber et<br>al. (2023)                        | Yes   | Yes                 | NR                  | Yes                     | No                   | No  | Yes                                | Yes                                   | Yes                        | No  | Yes                        | NA              | No                           | Yes                            | Fair                     |

Key:

1. Was the research question or objective in this paper clearly stated?
2. Was the study population clearly specified and defined?
3. Was the participation rate of eligible persons at least 50%?
4. Were all the subjects selected or recruited from the same or similar populations (including the same time period)? Were inclusion and exclusion criteria for being in the study prespecified and applied uniformly to all participants?

5. Was a sample size justification, power description, or variance and effect estimates provided?
6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?
7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?
8. For exposures that can vary in amount or level, did the study examine different levels of the exposure as related to the outcome (e.g., categories of exposure, or exposure measured as continuous variable)?
9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?
10. Was the exposure(s) assessed more than once over time?
11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?
12. Were the outcome assessors blinded to the exposure status of participants?
13. Was loss to follow-up after baseline 20% or less?
14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?
15. Overall quality rating

Abbreviations: CD = cannot determine; NA = not applicable; NR = not reported; Pop. = population; Part. = participation



Eleven studies recruited general adult population samples (Badellino et al., 2021; Batterham et al., 2021; Bierman et al., 2021; Canet-Juric et al., 2020; Feter et al., 2021; Hagen et al., 2023; Hertz-Palmor et al., 2021; Shuster et al., 2021; Simonse et al., 2022; Strizzi et al., 2023; Weber et al., 2023). The remaining six studies recruited specific populations, two recruited parents (Murray et al., 2023; Baranov et al., 2022; ), two recruited middle- and older-aged adults (Choi et al., 2023; Lee et al., 2022), one recruited young adults (Graupensberger et al., 2022) and one recruited adults who were working at the time baseline measures were completed (Bierman et al., 2021).

The total sample size across the 17 studies was 31,680 participants. The number of participants in each study varied between 241 and 6057 participants. All studies reported numbers on gender distribution. Across the 17 studies there were 22,545 female and 9,135 male participants.

### **1.3.4 Measures**

This review will synthesise the findings relating to mental health and personal financial changes due to the COVID-19 pandemic. Other variables in the included studies will not be examined as these do not pertain to the research question.

#### **1.3.4.1 Measures of financial changes due COVID-19**

Most studies examined the perceived economic impact of the COVID-19 pandemic ( $n = 9$ ) (Baranov et al., 2022; Canet-Juric et al., 2020; Feter et al., 2021; Hagen et al., 2023; Hertz-Palmor et al., 2021; Murray et al., 2023; Shuster et al., 2021; Strizzi et al., 2023). Within these nine studies, economic impact was measured by either a question with a simple yes/no response (e.g., 'have you experienced a loss in income due to COVID-19?') ( $n = 4$ ) or on a Likert-type scale ( $n = 5$ ). Two considered both income loss and subjective financial worry (Hertz-Palmor et al., 2021), and one assessed both income loss and financial hardship (Murray et al., 2023). Of the remaining eight studies, four measured financial worry only, either using a Likert-type scale or a yes/no question (Badellino et al., 2021; Batterham et al., 2021; Graupensberger et al., 2022; Weber et al., 2023). Two examined financial hardship only, one through three questions with Likert-type scales to indicate frequency (Bierman et al., 2021) and one which measured financial hardship as a count (observed values ranged from 0-5) and included aspects of financial hardship such as being unable to pay bills and having enough money to buy food (Choi et al., 2023). Finally, only two of the seventeen studies used validated standardised measures. One study measured 'financial stress' using the Psychological Inventory of Financial Scarcity (PIFS; Van Dijk et al., 2022) which considers four aspects of this subjective experience: an appraisal of insufficient financial resources, an appraisal of lack of control over one's financial situation, financial rumination and worry, and a

short-term focus (Simonse et al., 2022). The second study measured financial hardship using the Economic Hardship Questionnaire (EHQ; Lempers et al., 1989), which was adapted by excluding two items relating to activities which were not permitted at the time the survey was administered due to COVID-19 restrictions (Lee et al., 2022). This study also examined common lifestyle changes due to COVID-19-related financial restraints (e.g., cutting back on charitable contributions, and reducing household utility use) (Lee et al., 2022). Most studies measured financial changes due to COVID-19 once at baseline ( $n = 13$ ), and the remaining studies repeated these measures at least once ( $n = 4$ ).

#### **1.3.4.2 Measures of mental health outcomes**

Most studies examined both depressive and anxiety symptoms ( $n = 10$ ) (Batterham et al., 2021; Canet-Juric et al., 2020; Feter et al., 2021; Hertz-Palmor et al., 2021; Graupensberger et al., 2022; Hagen et al., 2023; Murray et al., 2023; Shuster et al., 2021; Strizzi et al., 2023). One of these specifically measured maternal depression and anxiety (Murray et al., 2023), and another also measured affect (Canet-Juric et al., 2020). Two studies examined depressive symptoms only (Badellino et al., 2021; Lee et al., 2022). Of the thirteen studies examining depressive symptoms, the majority used a version of the Patient Health Questionnaire (PHQ; Kroenke et al., 2010) (most frequently PHQ-9). Other measures used by one study each include: Beck Depression Inventory (BDI-II; Beck et al., 1996), Hospital Anxiety and Depression Scale (HADS; Zigmond et al., 1983), Patient-Reported Outcomes Measurement Information System (PROMIS; Bevens et al., 2014) and Zung Self-Rating Depression scale (Zung, 1965). Of the eleven studies measuring anxiety, seven utilised the Generalized Anxiety Disorder 7-item questionnaire (GAD-7; Spitzer et al., 2006). Two studies used the State-Trait Anxiety Inventory (STAI; Spielberger et al., 1970), one used the HADS (Zigmond et al., 1983) and another used PROMIS (Bevens et al., 2014). The two studies which examined psychological distress both used a version of the Kessler questionnaire (K-6 and K-10; Kessler et al., 2003) (Baranov et al., 2022; Bierman et al., 2021). The two studies which measured affect used either the full or short version of the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) (Canet-Juric et al., 2020; Choi et al., 2023). Finally, one study assessed global mental health using the Mental Health Index (MHI-5; Rumpf et al., 2001) (Simonse et al., 2022).

#### **1.3.5 Statistical analyses**

Six studies conducted linear mixed-effects models (Graupensberger et al., 2022; Hertz-Palmor et al., 2021; Shuster et al., 2021; Simonse et al., 2022; Weber et al., 2023). Multivariate regression model analyses were conducted by five studies (Badellino et al., 2021; Feter et al., 2021; Lee et al., 2022; Murray et al., 2023; Strizzi et al., 2023). Other statistical analyses conducted include

repeated measures Analysis of Variance (ANOVA) (Canet-Juric et al., 2020; Hagen et al., 2023), Ordinary Least Squares (OLS) regression models (Bierman et al., 2021; Choi et al., 2023), Difference-in-Differences (DiD) model (Baranov et al., 2022), quadratic growth models (Batterham et al., 2021) and mediation analysis (Simonse et al., 2022).

### **1.3.6 Findings**

Firstly, the findings related to the relationship between COVID-19 and mental health will be discussed, followed by findings related to COVID-19 and financial changes. Finally, findings regarding the relationship between financial changes due to COVID-19 and mental health will be synthesised. This synthesis will consider three specific aspects of financial circumstances, namely: objective economic impact, subjective financial stress and financial hardship.

#### **1.3.6.1 Mental health and the COVID-19 pandemic**

Most studies examined changes in mental health outcomes from prior to during the pandemic ( $n = 14$ ) and these reported mixed findings. Most studies ( $n = 8$ ) found that mental health was worse during the pandemic compared to pre-pandemic levels (Badellino et al., 2021; Batterham et al., 2021; Canet-Juric et al., 2020; Feter et al., 2021; Graupensberger et al., 2022; Hagen et al., 2023; Shuster et al., 2021; Weber et al., 2023). Of these, half ( $n = 4$ ) found increases in depressive symptoms, and the other half found increases in both depressive and anxiety symptoms. One of these studies took place during the first ten weeks of the first wave of the pandemic and found that symptoms of depression and anxiety initially peaked but then declined (Shuster et al., 2021). The study with the longest data collection period during the COVID-19 pandemic (May 2020 - March 2022) found that poor mental health peaked during the two national lockdowns and improved as restrictions were lifted (Weber et al., 2023). One study found that participants with pre-existing mental health conditions prior to the pandemic reported the highest levels of anxiety and depression during the COVID-19 pandemic (Hagen et al., 2023).

Five studies indicated that mental health (i.e., affect, anxiety, global mental health, psychological distress, and depression) did not significantly change following the onset of the pandemic (Baranov et al., 2022; Lee et al., 2022; Murray et al., 2023; Simonse et al., 2021; Strizzi et al., 2023). One such study by Simonse et al. (2021) found that mean levels of global mental health did not change in the first six months of the pandemic compared to pre-pandemic levels. However, this same study found that this concealed the heterogeneity in the sample as 80% of participants reported either improved or worsened mental health (Simonse et al., 2021). Of these studies, two found that anxiety, affect, and depression significantly improved but these were all small effect sizes (Canet-Juric et al., 2020; Lee et al., 2022). One reported mixed findings, that maternal

depressive symptoms increased but that maternal anxiety decreased with a small effect size (Murray et al., 2023).

### **1.3.6.2 Financial outcomes and the COVID-19 pandemic**

Whilst not a primary focus of the studies reviewed, some reported on the changes in people's financial circumstances from pre-pandemic to during the pandemic. Feter et al. (2021) determined that a negative economic impact was reported by 45.3% (95% CI: 42.7%, 47.8%) of the respondents during the first few months of the COVID-19 pandemic. Another study conducted in the same time period found that over one quarter of participants experienced a reduction in family income, with one-fifth experiencing financial problems (Leet et al., 2022). Bierman et al. (2021) found pre-pandemic financial hardship was positively associated with consistent exposure to periods of financial hardship during the pandemic.

### **1.3.6.3 Objective economic impact and mental health**

As discussed above, most studies examined the relationship between perceived objective economic impact due to COVID-19 and mental health outcomes (n = 9) (Baranov et al., 2022; Canet-Juric et al., 2020; Feter et al., 2021; Hagen et al., 2023; Hertz-Palmor et al., 2021; Murray et al., 2023; Shuster et al., 2021; Strizzi et al., 2023). Of these, seven reported a significant positive association between economic impact and depressive symptoms. Similarly, five showed that economic impact was positively associated with anxiety symptoms. Hertz-Palmor et al. (2021) found that in both study cohorts, economic impact was more strongly associated with depression than anxiety symptoms. However, the increase in anxiety symptoms was steeper than that of depression symptoms (Hertz-Palmor et al., 2021). One of the nine relevant studies examining economic impact found that it was not associated with either depressive or anxiety symptoms (Hagen et al., 2023). This study received an overall quality assessment rating of 'poor' due to the increased risk of bias, including due to the high attrition rate (54.95%) and sample variability. In terms of the other mental health outcomes studied, Baranov et al. (2022) showed that, whilst mental health had not deteriorated overall, COVID-19 related economic impact was significantly associated with increased psychological distress. Regarding affect, Canet-Juric et al. (2020) found that the lower the economic impact, the more the positive affect at both time points.

### **1.3.6.4 Subjective financial stress and mental health**

Seven studies examined the relationship between subjective financial worry due to COVID-19 and mental health (Badellino et al., 2021; Batterham et al., 2021; Graupensberger et al., 2022; Hertz-Palmor et al., 2021; Simonse et al., 2022; Weber et al. 2023). All found positive associations between COVID-19-related financial stress and mental health (i.e., global mental health, anxiety

and depressive symptoms). One of the two studies reported by Hertz-Palmor et al. (2021) demonstrated a positive association between financial worries and depression. This association was unique to financial worries as health-related worries were associated with general symptom load but not depression. Furthermore, Hertz-Palmor et al. (2021) found that this association remained while controlling for pre-COVID-19 income. This suggests that variability in depressive symptoms is only partially explained by objective financial situation and that financial stress may be a more significant predictor of depression. In terms of global mental health, Simonse et al. (2022) reported that increased financial stress predicted worsening mental health. Simonse et al. (2022) also conducted a mediation analysis where mental health was the dependent variable, financial stress was the mediator, and income, savings, and debts were the independent variables. This analysis found that financial stress mediated the relationship between savings and debts on the one hand, and changes in mental health on the other.

### **1.3.6.5 Financial hardship and mental health**

Four studies examined the relationship between financial hardship and mental health (Bierman et al., 2021; Choi et al., 2023; Lee et al., 2022; Murray et al., 2023). Lee et al. (2022) utilised a standardised measure, the EHQ (Lempers et al., 1989), which focuses on changes in a household's style of living due to financial reasons. Lee et al. (2022) found that increased financial hardship predicted an increase in depressive symptoms. The remaining three studies reported positive associations between financial hardship and mental health (i.e., affect, maternal anxiety, maternal depression and psychological distress). Choi et al. (2023) found that financial hardship was significantly associated with increased negative affect and decreased positive affect, after adjusting for sociodemographic characteristics and emotional well-being at baseline. Murray et al. (2023) found that financial hardship predicted increases in maternal depression and anxiety, after accounting for pre-pandemic family income and baseline mental health. Bierman et al. (2021) found that financial hardship during the COVID-19 pandemic was positively associated with psychological distress, even when prior mental health and financial hardship were controlled.

## **1.4 Discussion**

This section will first summarise the main findings of the review and discuss these in relation to the existing evidence-base. It will then provide a methodological critique of the included studies and the review process itself, followed by implications, recommendations for future research and conclusions.

### 1.4.1 Findings in context

This review aimed to explore the relationship between COVID-19-related financial changes and mental health. Seventeen longitudinal studies met the aforementioned inclusion criteria; these recruited diverse groups from around the world, and examined various aspects of mental health outcomes and COVID-19-related financial disruption. Most studies examined objective economic impact, followed by subjective financial stress and financial hardship. The most common mental health outcomes examined were depressive symptoms and anxiety. Overall, the studies suggest that negative financial changes (such as income loss and increased financial stress) due to the COVID-19 pandemic have a negative impact on people's mental health (such as increased depression and anxiety).

The studies demonstrated mixed findings but evidenced an overall impact of COVID-19 on people's mental health, independent of objective economic impact. Similar findings have been found by a systematic review examining the psychological impact of COVID-19 on the general population and healthcare workers (Luo et al. 2020). Research on the psychological impact of COVID-19 has found that levels of psychological distress, anxiety, and depressive symptoms are higher in people with pre-existing mental health conditions (Andrade et al., 2022; Marvaldi et al., 2020; Phiri et al., 2021). The current review found similar results, supporting the external validity of this review. This review also found that COVID-19 negatively impacted people's financial circumstances, and that people who faced pre-pandemic financial hardship, were more likely to experience financial hardship during the pandemic. This is in line with studies which have identified several individual economic characteristics that represent risk factors for poor mental health during the COVID-19 outbreak, including low income (Andrade et al., 2022; Pieh et al., 2020) and socioeconomic status (Luo et al., 2020).

Ten studies in this review suggest that objective economic impact due to COVID-19 was associated with worsening anxiety and depression in the general population. Seven of these ten studies received an overall quality assessment rating of 'fair' or 'good', and controlled for potential confounding variables (e.g. pre-COVID-19 income, current income, employment, pre-pandemic mental health outcomes, sociodemographic characteristics such as age, gender and ethnicity). Controlling for confounding variables enhances the internal validity of these studies as it limits the influence of other variables that may affect the relationship between COVID-19-related financial changes and mental health outcomes. These studies also recruited general population samples and parents, supporting the generalisability of the findings to a wider population. However, one of the seven papers which examined the relationship between objective economic impact and mental health (anxiety and depression) found no association

(Hagen et al., 2023). This may be because this study had a significant risk of bias (and an overall quality rating of 'poor') due to several methodological limitations, including the high attrition rate (54.95%), sample variability and discontinuous measurement of economic impact ('yes' or 'no').

The reviewed studies suggest that subjective financial stress due to COVID-19 was associated with worsening mental health in the general public. All but one of the seven relevant studies received an overall quality assessment rating of 'fair' or 'good', and five controlled for potential confounding variables (e.g., job and health stressors, pre-COVID-19 income and sociodemographic characteristics). All studies recruited general population samples, including one sample of young adults, thus supporting the generalisability of the findings to the wider general population. There was some evidence that COVID-19-related financial stress may be a more significant predictor of mental health than objective financial hardship. This supports Frankham et al. (2020) who found that subjective financial hardship predicted mental health, and not objective financial hardship, and Marjanovic et al. (2015) who found that financial threat mediated the relationship between financial situation and mental wellbeing. The evidence of subjective financial hardship being a more significant predictor than objective financial hardship is limited in this review and further research is required. Research which measures both subjective and objective financial hardship and mental health over time would be beneficial.

The studies suggest that financial hardship due to COVID-19 was associated with worsening mental health. Fewer studies ( $n = 4$ ) examined this relationship, but all of these had a low risk of bias, controlled for potential confounds (e.g., baseline mental health, pre-COVID-19 income, prior financial hardship), and received an overall quality assessment rating of 'good'. However, all these studies recruited from specific populations (i.e., working adults, middle- and older-aged adults, and mothers of children born in one year in a specific city) which limits the generalisability of the results to other groups. Further research on the relationship between financial hardship and mental health in the general population is indicated.

#### **1.4.2 Limitations of the Reviewed Literature**

Given the significant economic impact of the COVID-19 pandemic, and the established association between financial circumstances and mental health, this review extends our understanding of this relationship within the context of the COVID-19 pandemic. Furthermore, this review provides recommendations for future research, implementation of policy, and possible supportive interventions. The longitudinal design of included studies is a strength of this review as it has meant that the direction of the interactions are examined and some level of causation can be

inferred. However, there are some notable methodological limitations across the studies that require consideration.

Firstly, there was significant heterogeneity in how studies measured COVID-19-related financial changes. Some used operational definitions of COVID-19-related financial changes with some lacking a clear definition, such as the study by Baranov et al. (2022) which used job loss as a proxy for economic impact. Only two studies used standardised measures, one of objective financial hardship and one of subjective financial stress. Most studies used one question to measure these financial variables and when several items were used, they did not assess the internal consistency of the scales used. Whilst most studies used Likert-type scales, for their analyses, most dichotomised the measurements (e.g., 'economic impact' and 'no economic impact'). This dichotomisation means that we lose information which means that the statistical power to detect a relation between the variable and patient outcome is reduced. Another limitation of dichotomising data is that the extent of variation in outcome between groups can be underestimated, and considerable variability may be subsumed within each group (Altman et al., 2006). All of these factors have consequences for validity and reliability, given the uncertainty that the specific financial variable is the construct being assessed, whether this assessment is accurate, and ultimately whether it is acceptable to compare these financial constructs across different studies.

All studies in this review used self-rated measures of mental health which may introduce information bias. Feter et al. (2021) adapted a validated measure to assess the frequency of pre-pandemic depressive and anxiety symptoms retrospectively which may lead to recall bias meaning that these findings need to be interpreted with caution.

Another prominent methodological limitation relates to sampling methods and participant characteristics, which have an impact on the representativeness and generalisability of the findings. Participation rates were frequently unclear or unreported, as was information describing the relevant COVID-19 context and relevant restrictions. Most studies employed convenience sampling of self-selecting participants and, therefore, may not be representative of the general population due to self-selection bias and non-response bias (Fowler, 2009). Some studies, such as that by Feter et al. (2021), reported significantly disproportionate gender differences as the recruited sample was 76.5% female, again, limiting the representativeness of the results. Most studies reported that there were limitations in their generalisability due to underrepresentation of specific groups, such as people from ethnic minority backgrounds and people of lower socioeconomic status. Most studies reviewed were conducted in countries with a largely individualistic culture, and the results, therefore, require replication in collectivistic cultures. Most



studies utilised online or telephone survey methods, usually due to COVID-19 social distancing measures, and this means that people without access to the necessary devices are likely to be underrepresented.

Other limitations related to data collection include the time periods over which the studies were conducted. The majority of the studies were conducted in the first six months of the COVID-19 pandemic. Whilst this has provided a more-thorough picture of the relationship between COVID-19-related financial changes and mental health, it also poses limitations as economic impact, financial stress, and financial hardship may not necessarily occur soon after a loss of income or other financial disruption. Similarly, the periods of time between data collection points were brief for several studies, such as Canet-Juric (2020) which had only 12-15 days between surveys. This impacted the validity of the results and contributed to this study receiving an overall quality assessment rating of 'poor'.

#### **1.4.3 Strengths and Limitations of the Review**

A strength of the current review is that, based on the author's knowledge, it is the first systematic review of the existing literature exploring the relationship between changes in individuals' financial situations due to COVID-19 and mental health. Another strength is that the current review was conducted in line with the 2020 PRISMA statement (Page et al. 2021) and was prospectively registered on Prospero to enhance the transparency and replicability of this review. Furthermore, there was 'substantial' agreement in the scoring with a second reviewer, which enhanced the validity and reliability of the assessment outcome.

However, there are a number of limitations of this systematic review which merit consideration. Firstly, only three databases were searched meaning that it is possible that relevant papers may not have been produced by these searches. Due to resource and time constraints, studies that were not written in English language were excluded. This may have caused a selection bias and cultural bias, which may limit the generalisability of the findings. It is a notable limitation that the quality assessment of the literature was conducted solely by the primary researcher. Screening the papers found from the database searches was also done solely by the primary researcher, although in order to reduce risk of bias, 10% of abstracts were reviewed by an independent second reviewer, as recommended by Boland, Cherry, and Dickson (2017).

#### **1.4.4 Clinical implications**

This review has contributed to the literature demonstrating that the COVID-19 pandemic has impacted both people's financial circumstances and mental health. This review has determined

that financial changes due to COVID-19 are associated with worsening mental health outcomes. Increased vulnerability to poor mental health due to COVID-19-related financial changes may have long-term consequences for both individuals and communities. Government policies and provision by statutory agencies of timely and sufficient financial support are required to prevent individuals experiencing worsening mental health outcomes as a result of these financial changes due to COVID-19.

In terms of clinical interventions, the association found in this review highlights that mental health practitioners should incorporate personal financial circumstances into their assessments, formulations and interventions. Therapeutic interventions that have been found to benefit individuals facing difficult life events or stressors should be offered to people whose mental health has been impacted by COVID-19-related financial disruption. Both Acceptance and Commitment Therapy (ACT) and Compassion-Focused Therapy (CFT) are premised on suffering of some sort being an inevitability of the human experience. Both ACT and CFT seek to reduce the psychological distress of this suffering by increasing either psychological flexibility (ACT) or the ability to receive compassion, including self-compassion (CFT).

#### **1.4.5 Future research**

Future research in this area should aim to address some of the limitations identified in the existing literature. The mechanisms by which COVID-19-related financial changes and mental health outcomes interact need to be explored, and in more detail. Studies should also utilise standardised measures of economic impact, financial stress and financial hardship which more adequately measures these constructs and their severity. Whilst this review was conducted in the UK, there was a lack of good quality UK-based studies which met the review criteria. This paucity needs to be addressed in order to understand the nuances of these relationships in the context of British culture. Future research should also investigate the effect of financial difficulties on mental health among populations with established increased vulnerability to these experiences.

#### **1.4.6 Conclusions**

This review aimed to collect and critique the evidence base regarding the relationship between changes in individuals' financial situations due to the COVID-19 pandemic and mental health. Since the onset of COVID-19, longitudinal studies have been conducted, across different countries of the world, with a variety of populations, and age groups across the life span, which suggests that such findings may generalise outside of these studies. Overall, this review demonstrates that the COVID-19 pandemic increased objective economic impact, financial

hardship and subjective financial stress. These negative changes in people's financial circumstances due to COVID-19, are associated with worsening mental health outcomes, especially in certain groups. Given that the COVID-19 pandemic has had significant individual, societal and global economic effects, further research is needed to continue to understand this relationship and inform relevant policy and interventions.

## **Chapter 2 A study investigating the roles of compassion, self-criticism and self-reassurance in the relationship between financial hardship and mental health**

### **2.1 Introduction**

The relationship between financial difficulties and mental health has been described by an established and growing body of research. Richardson, et al.'s systematic review of studies involving a range of different populations (e.g., general population, students, health service users) demonstrated that individuals in debt are more than three times as likely to experience mental health difficulties (2013). This review also showed that individuals in debt are at increased risk of specific difficulties such as substance misuse, depression and suicidal ideation, attempt and completion (Richardson, et al. 2013). This review predominantly included studies which had used a cross-sectional design, meaning that the direction of this association could not be determined, preventing any inferences regarding causality. Research has demonstrated that financial strain was associated with having an anxiety and/or depressive disorder, after adjusting for the effect of income (Dijkstra-Kersten, 2015). In terms of suicide, research during the COVID-19 pandemic found that financial strain (including food insecurity and job loss) was significantly associated with thoughts of self-harm and suicidal ideation (Elbogen et al., 2021).

The UK's Money and Pensions Service (MaPS) defines financial wellbeing as 'feeling secure and in control of your finances, both now and in the future' (Money and Pensions Service, 2020), for example being able to afford unexpected costs and being confident in one's ability to pay bills. In contrast, financial or economic hardship describes a state in which individuals have insufficient financial resources necessary to meet essential living costs, pay bills and maintain a household (Mirowsky and Ross 2001). Research has found financial hardship to be more strongly related to depression than other socio-economic factors such as educational attainment and equivalised household income (Butterworth et al., 2012).

Despite considerable research focusing on the relationship between financial difficulties and mental health, there is a need for further research regarding the specific mechanisms present within this relationship. Richardson et al (2013) highlight this research focus as imperative in order to develop effective preventative interventions to reduce the likelihood of those in debt developing mental health difficulties, and vice versa. Existing research on the role of psychological

factors in this relationship have found that subjective financial hardship (e.g., stress about finances) in the general population is a stronger predictor of mental health difficulties than objective measures of financial hardship, such as reducing the use of household utilities (Frankham et al., 2020). Furthermore, shame was found to partially mediate the impact of subjective financial hardship on anxiety, and hope was found to partially mediate the impact on wellbeing, depression and stress (Frankham et al., 2020). Research with seminary students similarly found evidence that shame acted as a mechanism in the relationship between financial hardship and anxiety, depression, and spiritual well-being (Blea et al., 2021).

Several theoretical models seeking to explain the relationship between financial variables and shame have been developed and tested, including the finances-shame model (Starrin et al., 2009). This model proposes that the greater the financial stress and the more experiences of being shamed, the greater the risk for psychosocial ill health (Starrin et al., 2009). This model views shame as a sign of an insecure social bond which may also have an impact on financial wellbeing and health. Shame has been a primary focus in Paul Gilbert's development of Compassion Focused Therapy (CFT). Gilbert proposed that there are two components to shame, external shame which focuses on the minds of others, and internal shame which focuses on self-judgement and how one perceives oneself (1992; 1996).

An evolutionary account of the social role of shame has formed the foundation for CFT, in which compassion is defined as "a basic kindness, with a deep awareness of the suffering of oneself and of other living things, coupled with the wish and effort to relieve it" (Gilbert, 2009). A relatively recent systematic review showed that compassion-based interventions reduced shame and associated psychological distress, and increased self-compassion, in a diverse range of adult clinical and non-clinical populations (Westerman et al., 2020). Another relatively recent systematic review investigating the acceptability and effectiveness of CFT in clinical populations found that CFT leads to a reduction of mental health symptomatology, even among difficult to treat populations such as individuals with personality disorders and eating disorders (Craig et al., 2020).

To date, we know of no empirical studies that have investigated the relationships between financial hardship, compassion, and mental health outcomes, such as depression and anxiety, in any population. However, there is theoretical and clinical justification that the psychological variable of compassion may be relevant to the relationship between financial hardship and mental health difficulties. In this study, compassion will be conceptualised as the three flows of compassion: self-compassion, compassion toward others and compassion from others (Gilbert et al., 2014). Gilbert et al. operationalise fears of compassion as the avoidance or fear response that

individuals can have to compassion, which can exist for all three directions (or flows)(2014). An example of fear of self-compassion could be that it is considered self-indulgent or weak (Gilbert & Mascaro, 2017). An example of fear of compassion for others could be that it will be viewed by others as manipulative or for self-interest (Gilbert & Mascaro, 2017). Gilbert et al. developed the 'Fears of Compassion Scale' (FCS) to measure fears of the three flows of compassion (to self, to others and from others)(2011). Kirby et al. conducted the first meta-analysis synthesizing all existing literature that has used the FCS to assess its correlation with mental health outcomes (2019). This meta-analysis found that all three fears of compassion have a significant correlation with all mental health outcomes (Kirby et al., 2019). Fear of self-compassion had the largest correlations with self-criticism and wellbeing, and fear of compassion from others had the largest correlation for shame, closely followed by depression, and then self-criticism (Kirby et al., 2019). Self-criticism has previously been found to be highly associated with shame (Gilbert et al., 2012), and a pervasive feature of psychopathology (Gilbert & Irons, 2005; Zuroff, Santor, & Mongrain, 2005). Therefore, people's tendencies to be self-critical and/or self-reassuring will also be explored in this study.

### **2.1.1 Aim**

The primary objective of this study is to investigate the roles of compassion, self-criticism and self-reassurance in the relationship between financial hardship and mental health.

### **2.1.2 Hypotheses**

- Greater financial hardship will predict worse later mental health outcomes.
- Poorer mental health outcomes will be correlated with lower compassion.
- Poorer mental health outcomes will be correlated with higher self-criticism and lower self-reassurance.
- Lower compassion will be correlated with greater financial hardship.
- Greater financial hardship at time one will negatively affect later mental health outcomes via the mediators of compassion and self-criticism.

## **2.2 Method**

### **2.2.1 Design**

A longitudinal questionnaire-based design was used, with a 3-month interval between two data collections points.

### 2.2.2 Participant recruitment

Participants were eligible to participate in this international study if they were aged 18 and over, and were fluent in English (as questionnaires are written and standardised in English), regardless of where they lived. This study aimed to actively recruit and over-sample participants from groups who may be particularly vulnerable to experiencing challenging financial circumstances and/or mental health difficulties. These groups included, but are not limited to: students, individuals in receipt of financial support, single parents, individuals using food banks or community pantries, individuals who do not have secure housing or are homeless, and individuals who have accessed mental health services. As such, these groups were specifically targeted in advertising the study whilst the study was also advertised more generally through social media. Organisations offering advice and support for people experiencing financial difficulties were invited to advertise this study. This study was also advertised on the researchers' associated university's research participation pool webpage and a website specifically designed for the purpose of recruitment (Call for Participants, 2022). Participants did not receive financial reimbursement but were entered into a prize draw for gift vouchers. Due to the recruitment methods, it is not possible to calculate the response rate.

A total of 360 participants took part at initial data collection, of which 90% (n=324) sufficiently completed the questionnaires. Initial data collection occurred between 6<sup>th</sup> October 2022 and 7<sup>th</sup> December 2022. At time two, 68.5% (n = 222) participants sufficiently completed the questionnaires and could be linked to time one responses, thus were included in the analysis. Time two data was collected between 20<sup>th</sup> January 2023 and 15<sup>th</sup> March 2023. It was initially planned that there would be three timepoints but this plan was amended due to delays in the recruitment process and time constraints related to the Doctorate in Clinical Psychology. Figure 1 shows the recruitment flow diagram.

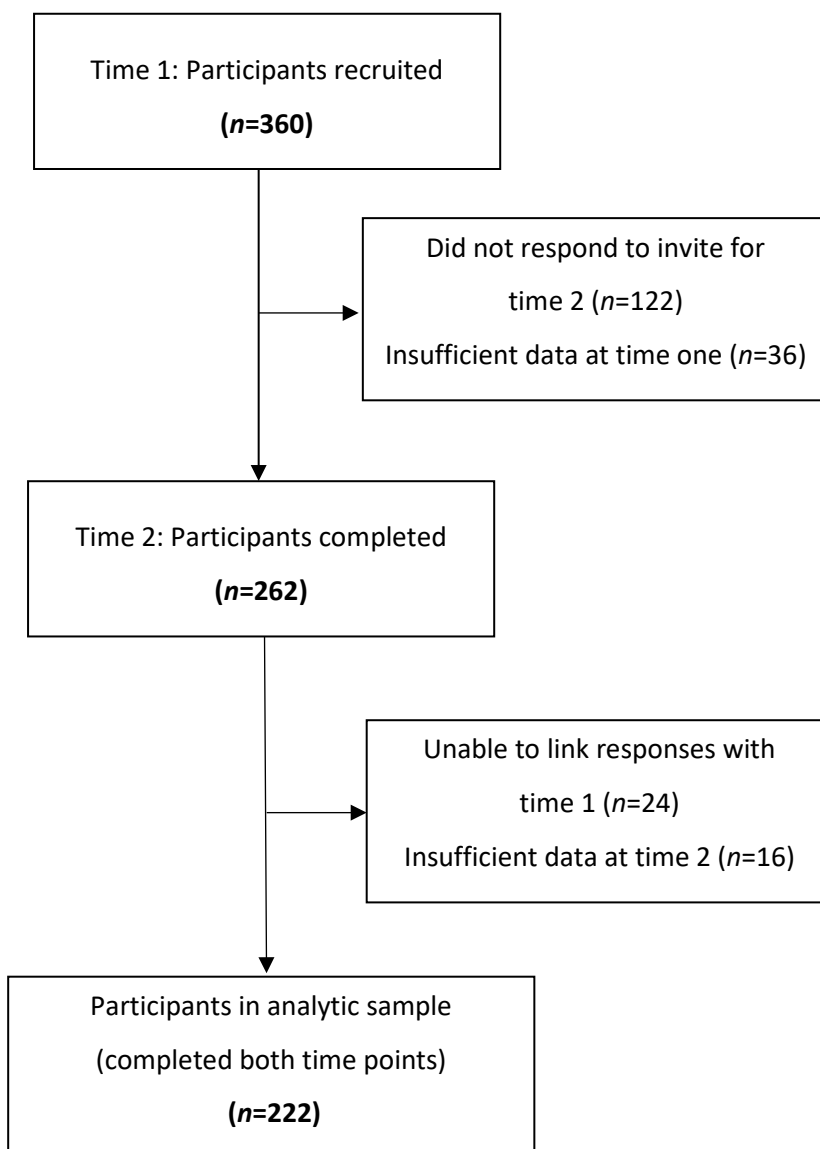


Figure 2. Recruitment flow diagram

### 2.2.3 Measures

#### 2.2.3.1 Demographic questionnaire

This self-report measure gathered information on age, gender, ethnicity, country of residence, marital status, highest level of education completed, housing and employment statuses, and nature of employment. See Appendix B for this questionnaire.

#### 2.2.3.2 Financial circumstances questionnaire

Self-report questionnaire constructed by researchers to gain information regarding participants' income from employment, financial support received, personal debt, ability to pay financial commitments and afford basic living costs, perception of their financial circumstances following



the COVID-19 pandemic and concerns related to the current 'cost of living crisis'. This questionnaire has been informed by Frankham et al. (2020) and includes items such as 'thinking about these credit cards and store cards only, approximately how much in total do you currently owe on these cards?' and 'do you feel that you are more, less or similarly worried about your financial situation as you were before the COVID-19 pandemic (early 2020)?'. See Appendix C for the full questionnaire.

### **2.2.3.3 Standardised financial measures**

#### **2.2.3.3.1 Economic Hardship Questionnaire (EHQ; Lempers et al., 1989)**

A 12-item scale designed to elicit indicators of objective financial hardship in the past 6 months, such as 'change food shopping or eating habits to save money'. For the first 10 items, participants answer questions using a 4-point Likert scale from 0 (never) to 3 (very often). Higher scores indicate greater perceived economic hardship. Internal consistency for the current sample at time one was good at  $\alpha = .85$ . See Appendix D for the full measure.

#### **2.2.3.3.2 InCharge Financial Distress/Financial Well-Being Scale (IFDFW; Prawitz et al., 2006)**

An 8-item measure of perceived financial distress and financial well-being. Questions include 'how stressed do you feel about your personal finances in general?' and 'how often do you worry about being able to meet normal monthly living expenses?'. Higher scores indicate greater financial wellbeing. This measure has demonstrated excellent internal consistency in the present study at time one at  $\alpha = .91$ . See Appendix E for the full measure.

### **2.2.3.4 Standardised mental health measures**

#### **2.2.3.4.1 Generalized Anxiety Disorder Scale (GAD-7; Spitzer et al., 2006)**

A 7-item questionnaire measuring symptoms of general anxiety. Participants were asked to report 'over the last 2 weeks, how often have you been bothered by...' seven anxiety symptoms (e.g., 'feeling nervous, anxious or on edge'). Response options were a 4-point Likert scale from 'not at all', 'several days' to 'nearly every day', scored as 0-3, respectively. Scores range from 0 to 21, with higher scores indicating higher levels of anxiety. The GAD-7 was selected due to it being a valid self-report measure of anxiety in both clinical and non-clinical populations (Löwe et al., 2008). Internal consistency was excellent for this sample at time one at  $\alpha = .92$ . See Appendix F for the full measure.

**2.2.3.4.2 Patient Health Questionnaire (PHQ-9; Kroenke, et al., 2001)**

A 9-item scale validated as both a measure of depressive symptoms and a diagnostic measure of depressive disorders. This measure asks how frequently depressive symptoms are experienced over the past 2 weeks with a four-point Likert scale from 'not at all' to 'nearly every day', scored as 0-3 respectively. Scores range from 0 to 21, with higher scores indicating higher levels of anxiety. Excellent internal consistency at time one was demonstrated at  $\alpha = .92$ . See Appendix G for the full measure.

**2.2.3.4.3 Perceived Stress Scale (PSS; Cohen et al., 1983)**

A 10-item questionnaire measuring global perceived stress by asking about the frequency of thoughts and feelings over the last month using a 5-point Likert scale from 'never' to 'very often', scored as 0-4 respectively. An example item is 'in the last month, how often have you felt that you were on top of things?'. Scores range from 0 to 40, with 14 to 26 indicating moderate stress and 27 to 40 indicating high perceived stress. This measure has demonstrated good internal consistency in the present study at time one at  $\alpha = .86$ . See Appendix H for the full measure.

**2.2.3.4.4 Clinical Outcomes Routine Evaluation- General Population Version (GP-CORE; Evans et al., 2005)**

A 14-item measure of global mental health/wellbeing in the general population. The GP-CORE asks how often symptoms are experienced over the past week with a five-item Likert scale from 'not at all' to 'most or all of the time, scored as 0-4 respectively. An example item is 'I have been happy with the things I have done'. This measure has demonstrated good internal consistency in the study sample at time one at  $\alpha = .88$ . See Appendix I for the full measure.

**2.2.3.4.5 Brief Suicide Cognitions Scale (B-SCS; Rudd & Bryan, 2021)**

A recently published 6-item self-report measure of suicide risk which has demonstrated good reliability and validity (Rudd & Bryan, 2021). The B-SCS asks respondents to indicate their level of agreement with each statement (e.g., 'I can't cope with my problems any longer') using a 5-point Likert scale from 'strongly disagree' to 'strongly agree', scored as 1-5 respectively. Internal consistency for the current sample at time one was excellent at  $\alpha = .91$ . See Appendix J for the full measure.

### 2.2.3.5 Standardised psychological measures

#### 2.2.3.5.1 Fears of Compassion Scale (FCS; Gilbert et al., 2011)

A 38-item measure comprising of three subscales: fear of expressing compassion for others, responding to compassion from others, and expressing kindness and compassion towards the self. Respondents are asked to indicate their level of agreement with each statement using a 5-point Likert scale from 'don't agree at all' to 'completely agree', scored as 0-4 respectively. An example item is from the 'compassion for others' subscale is 'people will take advantage of me if they see me as too compassionate'. An example item from the 'compassion from others' subscale is 'Wanting others to be kind to oneself is a weakness'. An example item from the 'compassion to self' subscale is 'I feel that I don't deserve to be kind and forgiving to myself'. The measure demonstrated good or excellent internal consistency across subscales within this sample at time one;  $\alpha = 0.86$  for 'compassion for others',  $\alpha = 0.92$  for 'compassion from others' and  $\alpha = 0.94$  for 'compassion to self'. See Appendix K for the full measure.

#### 2.2.3.5.2 Forms of self-criticising/attacking & self-reassuring scale (FSCRS; Gilbert et al., 2004)

A 22-item self-report measure of an individual's thoughts and feelings about themselves during a perceived failure. Two subscales measure forms of self-criticising ('inadequate self' and 'hated self') and one subscale measures tendencies to be reassuring to the self ('reassured self'). Respondents are asked to indicate how much each statement applies to them using a 5-point Likert scale from 'not at all like me' to 'extremely like me', scored as 0-4 respectively. An example item is 'people will take advantage of me if they see me as too compassionate'. Internal consistency for the current sample at time one was either good or excellent at  $\alpha = .93$  for 'inadequate self',  $\alpha = .88$  for 'hated self' and  $\alpha = .90$  for 'reassured self'. See Appendix L for the full measure.

### 2.2.4 Procedure

Participants were given the option of completing the questionnaires online via Qualtrics, a secure online survey website, or receiving a paper version to complete by post. No participants requested a paper version. Participants were advised that they would be entered into a prize draw for Amazon gift vouchers (value of £25) following participation at each time point. Upon accessing the study online, participants were directed to the information sheet (see Appendix M) and consent form (see Appendix N). Informed consent was obtained from all participants. Email addresses were taken as the identifying information to match responses and to contact

participants to invite them to complete the follow-up survey. Email addresses were kept separate from the responses in the data set. Following completion of the questionnaires, participants were directed to a debriefing statement (see Appendix O) which included self-help resources (e.g., video of mindfulness exercises) and details of national and international mental health and financial advice and support services. Participants were invited by email to complete the follow-up survey 3 months after completing the initial survey. Reminder emails were sent to participants one week later. See Appendix P for an example advertisement.

### **2.2.5 Statistical analyses**

There was minimal missing data for individual items on standardised measures, with only 3 out of 126 items (2.38%) having over 5% missing values for those items and the highest missing values for an item was 6.8%. Missing values were substituted primarily with the mean for the whole sample for individual items, but some missing values were substituted with the median or mode depending on the properties of the item data, such as distribution, in line with Kumar (2023). SPSS V28.0 for Windows was used for data analysis. Data was assessed at all time points for adherence to assumptions of normality. For both time points, measures of skewness and kurtosis (within range of -2 to +2) of total scores and scatterplots of all associations were completed, and histograms were visually inspected. These assessments confirmed that the data distributions were normal, linear and without significant outliers.

In order to establish associations between the variables, bivariate two tailed correlations were initially conducted. All variables demonstrating significant associations with all other variables were then entered into hierarchical multiple regressions. Hierarchical multiple regressions were conducted using the Enter method. The independent variables entered were subjective financial hardship at timepoint two (step one) and objective financial hardship at timepoint two (step two). The potential covariates entered at step three were gender, age and ethnicity (measured at timepoint one) and the variables entered at step four were the mental health outcomes measures at timepoint one (anxiety, depressive symptoms, stress, global mental health and suicide cognitions). The dependent variables were the corresponding mental health outcomes measured at timepoint two.

Mediation analyses were conducted for each mental health outcome which had demonstrated significant associations in the longitudinal regression analyses (anxiety, depressive symptoms, stress and suicide ideation). The independent variable was objective financial hardship (measured at timepoint one). The dependent variables analysed were anxiety, depressive symptoms, stress and suicide ideation (measured at timepoint two). The potential mediators analysed were fears of

compassion to others, from others and to self, and self-criticism and self-reassurance. Sample size was initially estimated using Kline's (2015) model of 20 participants per parameter, yielding a required sample of 120 participants. Fritz and Mackinnon suggest a similar sample size of 116 participants for a medium effect size (2007).

These mediation analyses were conducted using PROCESS version 4.0 (Hayes, 2022). In order to compare indirect effects through different mediators, variables were entered into a parallel mediator model (model 4) (Hayes, 2022). In this model no mediator is modelled as influencing another mediator, and as such are analysed independently, although Hayes (2013) acknowledges that these mediators are likely to be correlated. To test the presence of the indirect effects, bootstrap procedures were used with 5000 samples and considering a confidence interval of 95%. An indirect effect is present if the zero value is not included within the confidence interval. A minimum confidence interval of 95% was considered for all the analyses performed in this study.

### **2.2.6 Ethical approval**

This study was conducted as part of completion of a Doctorate in Clinical Psychology and ethical approval was granted by the University of Southampton Ethics Committee (ERGO ID: 74697). See Appendix Q and Appendix R for confirmations of ethical approval.

## **2.3 Results**

### **2.3.1 Participant characteristics**

A total of 324 participants took part at initial data collection and 68.5% (n = 222) participants sufficiently completed the questionnaires at the second timepoint and were included in the analysis. Table 2 presents the characteristics of the analytic sample at time one. Of these, 81.1% (n = 180) were female, the average age was 25.01 years (range 18-80, SD = 11.35), and 93.7% (n = 208) of participants were living in the United Kingdom at the time of initial data collection. In considering their current financial situation compared to before the COVID-19 pandemic began, 38.7% (n = 86) believed their financial situation had worsened and 57.2% (n = 127) felt more worried. On scales of 0-7, participants scored a mean score of 5.2 (SD = 1.6) for how worried they feel about the 'cost of living crisis'. The proportion of participants scoring above the cut-off point for moderate or severe depressive symptoms on the PHQ-9 at Time 1 was 23.9% (n = 53). The proportion of participants scoring above the cut-off point for moderate or severe anxiety on the GAD-7 at Time 1 was 34.2% (n = 76). The proportion of participants scoring above the cut-off point for moderate or high stress on the PSS was 63.5% (n = 141) at Time 1 and 20.3% (n = 45) at

Time 2. The proportion of participants scoring above the clinical cut-off point on the GP-CORE at Time 1 was 60.8% ( $n = 135$ ).

**Table 2.** Sample characteristics and descriptive statistics at Time 1 ( $n = 222$ )

|                                   | <i>n</i> | %    | <b>M</b> | <b>SD</b> |
|-----------------------------------|----------|------|----------|-----------|
| <b>Age</b>                        |          |      | 25.01    | 11.35     |
| <b>Gender</b>                     |          |      |          |           |
| Female                            | 180      | 81.1 |          |           |
| Male                              | 37       | 16.7 |          |           |
| Non-binary/prefer not to say      | 5        | 2.3  |          |           |
| <b>Ethnicity</b>                  |          |      |          |           |
| White                             | 175      | 78.8 |          |           |
| Asian                             | 27       | 12.2 |          |           |
| Mixed/multiple ethnic background  | 9        | 4.1  |          |           |
| Black                             | 6        | 2.7  |          |           |
| Any other ethnic background       | 5        | 2.3  |          |           |
| <b>Marital status</b>             |          |      |          |           |
| Single                            | 171      | 77   |          |           |
| Married                           | 23       | 10.4 |          |           |
| Living with a partner             | 23       | 10.4 |          |           |
| Separated, divorced, widowed      | 5        | 2.3  |          |           |
| <b>Highest level of education</b> |          |      |          |           |
| Secondary                         | 146      | 65.8 |          |           |
| Tertiary (Undergraduate)          | 43       | 19.4 |          |           |
| Quaternary (Postgraduate)         | 33       | 14.9 |          |           |

| <b>Employment status</b>  |          |      |   |    |
|---|----------|------|---|----|
| <b>Full or part-time student</b>  | 117      | 52.7 |   |    |
|   | <i>n</i> | %    | M | SD |
| <b>Working full-time</b>  | 45       | 20.3 |   |    |
| <b>Working part-time</b>  | 35       | 15.8 |   |    |
| <b>Unemployed and seeking work</b>  | 14       | 6.3  |   |    |
| <b>Unable to work due to health or disability</b>   | 6        | 2.7  |   |    |
| <b>Monthly income</b>   |          |      |   |    |
| <b>£0-£499</b>  | 119      | 53.6 |   |    |
| <b>£500-£999</b>  | 20       | 9.0  |   |    |
| <b>+£1000</b>   | 49       | 22.1 |   |    |
| <b>Financial situation</b>  |          |      |   |    |
| <b>In receipt of financial welfare support/benefits</b>   | 40       | 18.0 |   |    |
| <b>Has at least one loan</b>  | 36       | 16.2 |   |    |
| <b>Has at least one credit or store card</b>  | 140      | 63.1 |   |    |
| <b>Has student loan</b>   | 154      | 69.4 |   |    |
| <b>Unable to pay bill or financial commitment in last 3 months</b>  | 52       | 23.4 |   |    |
| <b>Has used less goods or services in the last 3 months due to money shortage (e.g. utilities, internet data)</b> | 60       | 27.0 |   |    |
| <b>Has gone without goods or services in the last 3 months due to money shortage (e.g. clothes, socialising)</b>  | 168      | 75.7 |   |    |

| <b>Standardised measures of mental health</b> |          |      |       |       |
|---|----------|------|-------|-------|
| <b>Objective financial hardship (EHQ)</b>     |          | 9.32 | 6.03  |       |
|   | <i>n</i> | %    | M     | SD    |
| <b>Subjective financial hardship (IFDFW)</b>  |          |      | 43.95 | 15.18 |
| <b>Anxiety (GAD-7)</b>                        |          |      | 8.21  | 5.48  |
| <b>Depressive symptoms (PHQ-9)</b>            |          |      | 10.02 | 6.74  |
| <b>Stress (PSS)</b>                           |          |      | 20.46 | 6.89  |
| <b>Global mental health (GP-CORE)</b>         |          |      | 24.04 | 9.89  |
| <b>Suicide cognitions (B-SCS)</b>             |          |      | 10.44 | 4.93  |
| <b>Compassion to others (FCS- TO)</b>         |          |      | 15.44 | 7.77  |
| <b>Compassion from others (FCS-FO)</b>        |          |      | 15.20 | 10.69 |
| <b>Compassion to self (FCS-TS)</b>            |          |      | 15.91 | 13.48 |
| <b>Self-criticism (FSCRS-SC)</b>              |          |      | 25.50 | 13.67 |
| <b>Self-reassurance (FSCRS-SR)</b>            |          |      | 16.66 | 7.06  |

EHQ economic hardship questionnaire, IFDFW incharge financial distress/financial well-being scale, GAD-7 generalized anxiety disorder scale, PHQ-9 patient health questionnaire, PSS perceived stress scale, GP-CORE clinical outcomes routine evaluation- general population version, B-SCS brief suicide cognitions scale, FCS fears of compassion scale – TO to others, FO from others, TS to self, FSCRS forms of self-criticising/attacking & self-reassuring scale – SR self-reassurance, SC self-criticism

### **2.3.2 Correlations**

Bivariate Pearson’s two tailed correlations between the standardised measures are presented in Table 3. All financial, mental health and compassion variables demonstrated significant correlations with one another in the expected direction.



**Table 3.** Bivariate correlations at T1 (n = 222)

|          | EHQ    | IFDFW  | GAD-7  | PHQ-9  | PSS    | GP-CORE | B-SCS  | FCS-TO | FCS-FO | FCS-TS | FSCRS-SR | FSCRS-SC |
|----------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|----------|----------|
| EHQ      | -      |        |        |        |        |         |        |        |        |        |          |          |
| IFDFW    | -.65** | -      |        |        |        |         |        |        |        |        |          |          |
| GAD-7    | .42**  | -.45** | -      |        |        |         |        |        |        |        |          |          |
| PHQ-9    | .41**  | -.44** | .80**  | -      |        |         |        |        |        |        |          |          |
| PSS      | .40**  | -.54** | .66**  | .72**  | -      |         |        |        |        |        |          |          |
| GP-CORE  | .36**  | -.49** | .73**  | .83**  | .78**  | -       |        |        |        |        |          |          |
| B-SCS    | .34**  | -.35** | .54**  | .69**  | .55**  | .66**   | -      |        |        |        |          |          |
| FCS-TO   | .18**  | -.20** | .22**  | .27**  | .18**  | .30**   | .29**  | -      |        |        |          |          |
| FCS-FO   | .36**  | -.35** | .53**  | .61**  | .49**  | .63**   | .58**  | .53**  | -      |        |          |          |
| FCS-TS   | .27**  | -.29** | .48**  | .59**  | .50**  | .61**   | .64**  | .34**  | .77**  | -      |          |          |
| FSCRS-SR | -.17*  | .30**  | -.44** | -.54** | -.51** | -.65**  | -.57** | -.19** | -.57** | -.61** | -        |          |
| FSCRS-SC | .36**  | -.41** | .56**  | .63**  | .64**  | .69**   | .67**  | .28**  | .65**  | .73**  | -.70**   | -        |

\*p < .05; \*\*p < .01; \*\*\*p < .001

EHQ economic hardship questionnaire, IFDFW incharge financial distress/financial well-being scale, GAD-7 generalized anxiety disorder scale, PHQ-9 patient health questionnaire, PSS perceived stress scale, GP-CORE clinical outcomes routine evaluation- general population version, B-SCS brief suicide cognitions scale, FCS fears of compassion scale – TO to others, FO from others, TS to self, FSCRS forms of self-criticising/attacking & self-reassuring scale – SR self-reassurance, SC self-criticism

### 2.3.3 Regression analyses

In order to test whether objective and subjective financial hardship were predictive of mental health at time two, whilst controlling for mental health at time one, longitudinal hierarchical multiple linear regressions were carried out using the Enter method. Results of the final models are shown in Table 4. For the final model, greater objective hardship significantly predicted increases in anxiety, depressive symptoms, stress and suicide cognitions over time, but not worsened global mental health (as measured by GP-CORE). Age was also significantly negatively associated with increased anxiety. Subjective financial hardship did not significantly predict mental health outcomes.

**Table 4.** Longitudinal hierarchical linear regression final models

|  | T2<br>Anxiety<br>$\beta$ | T2 Depressive<br>symptoms<br>$\beta$ | T2<br>Stress<br>$\beta$ | T2 Global<br>MH (GP-<br>CORE)<br>$\beta$ | T2 Suicide<br>cognitions<br>$\beta$ |
|--|--------------------------|--------------------------------------|-------------------------|--|-------------------------------------|
| Step 1: Objective FH                   | .13*                     | .21***                               | .19**                   | .05                                      | .13*                                |
| Step 2: Subjective FH                  | -.00                     | .04                                  | -.02                    | -.02                                     | .02                                 |
| Step 3: Demographics                   |                          |                                      |                         |  |                                     |
| Gender                                 | -.01                     | .02                                  | -.05                    | -.08                                     | .05                                 |
| Age                                    | -.11*                    | -.03                                 | -.03                    | -.01                                     | -.02                                |
| Ethnicity                              | -.02                     | .02                                  | .05                     | .04                                      | .07                                 |
| Step 4: Corresponding<br>T1 MH measure |                          |                                      |                         |  |                                     |
| T1 Anxiety                             | .69***                   |                                      |                         |  |                                     |
| T1 Depressive<br>symptoms              |                          | .72***                               |                         |  |                                     |
| T1 Stress                              |                          |                                      | .63***                  |  |                                     |
| T1 Global MH (GP-<br>CORE)             |                          |                                      |                         | .77***                                   |                                     |
| T1 Suicide cognitions                  |                          |                                      |                         |  | .76***                              |

FH financial hardship, MH mental health

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

## Appendix A

The final model significantly predicted T2 Anxiety:  $F(6, 215) = 47.51, p < .001, R^2 = .57$ , T2 Depressive symptoms:  $F(6, 215) = 67.78, p < .001, R^2 = .65$ , T2 Stress:  $F(6, 215) = 44.51, p < .001, R^2 = .55$ , T2 Global mental health:  $F(6, 215) = 64.82, p < .001, R^2 = .64$ , and T2 Suicide cognitions:  $F(6, 215) = 69.57, p < .001, R^2 = .66$ .

### 2.3.4 Mediation analyses

Objective financial hardship at time one was identified as a significant predictor of anxiety, depressive symptoms, stress and suicide cognitions at time two. The mediatory effects of the compassion variables were therefore considered for the relationships between these factors. Table 5 demonstrates the parameter estimates for the indirect effects on the relationship between objective financial hardship and the separate mental health outcomes, as mediated by compassion to others, compassion from others, compassion to self, reassured self and criticised self. These results suggest that fears of compassion from others partially mediated the relationships between objective financial hardship and all mental health outcomes. Fears of compassion to self partially mediated this relationship for depressive symptoms, stress and suicide cognitions, but not anxiety. Fears of compassion to others did not mediate this relationship. These results suggest that self-criticism and self-reassurance partially mediated the relationship between objective financial hardship and all mental health outcomes.

**Table 5.** Indirect effects of objective financial hardship on mental health through fears of compassion to others, compassion from others, compassion to self, and self-criticism and self-Reassurance

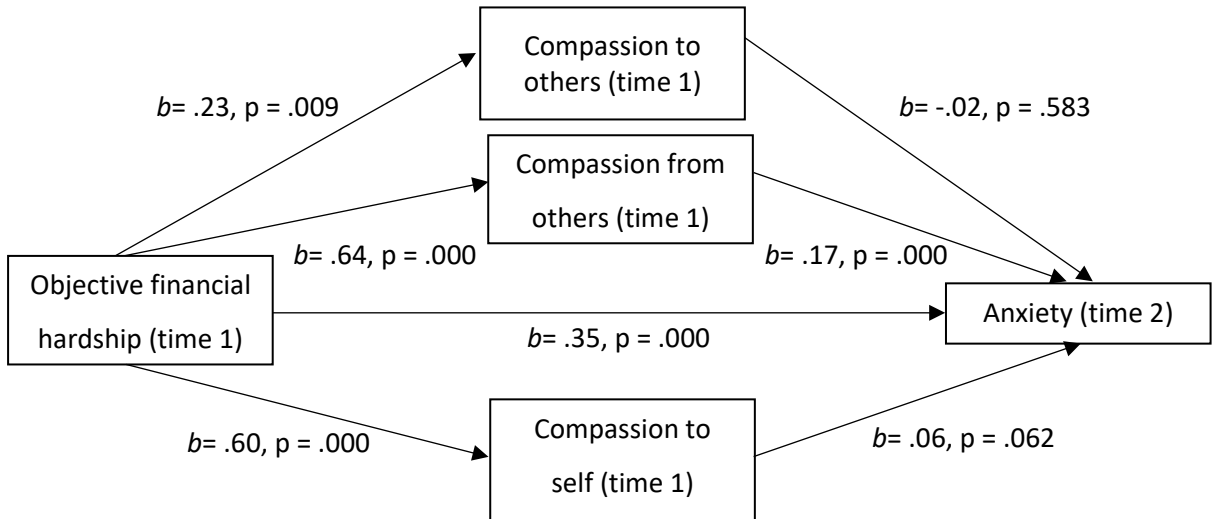
|                               | <i>b</i> | <i>SE</i> | <i>95% BCa CI</i> |       |
|-------------------------------|----------|-----------|-------------------|-------|
|                               |          |           | Lower             | Upper |
| <b>Anxiety</b>                |          |           |                   |       |
| <i>FCS Total</i>              | .14      | .03       | .08               | .21*  |
| <i>Compassion to others</i>   | -.01     | .012      | -.03              | .02   |
| <i>Compassion from others</i> | .11      | .04       | .05               | .19*  |
| <i>Compassion to self</i>     | .04      | .03       | -.01              | .09   |
| <i>Self-criticism</i>         | .11      | .03       | .06               | .17*  |
| <i>Self-reassurance</i>       | .03      | .02       | .00               | .06*  |
| <b>Depressive symptoms</b>    |          |           |                   |       |
| <i>FCS Total</i>              | .19      | .04       | .11               | .28*  |
| <i>Compassion to others</i>   | -.02     | .01       | -.05              | .01   |
| <i>Compassion from others</i> | .13      | .04       | .05               | .21*  |
| <i>Compassion to self</i>     | .08      | .03       | .03               | .15*  |
| <i>Self-criticism</i>         | .13      | .04       | .06               | .20*  |
| <i>Self-reassurance</i>       | .04      | .02       | .01               | .10*  |
| <b>Stress</b>                 |          |           |                   |       |
| <i>FCS Total</i>              | .17      | .04       | .09               | .26*  |
| <i>Compassion to others</i>   | -.01     | .01       | -.05              | .01   |
| <i>Compassion from others</i> | .10      | .04       | .03               | .19*  |
| <i>Compassion to self</i>     | .08      | .03       | .03               | .15*  |
| <i>Self-criticism</i>         | .12      | .04       | .05               | .20*  |
| <i>Self-reassurance</i>       | .06      | .03       | .01               | .12*  |
| <b>Suicide cognitions</b>     |          |           |                   |       |
| <i>FCS Total</i>              | .17      | .04       | .09               | .26*  |
| <i>Compassion to others</i>   | -.00     | .01       | -.02              | .02   |
| <i>Compassion from others</i> | .09      | .03       | .03               | .15*  |
| <i>Compassion to self</i>     | .09      | .03       | .04               | .15*  |
| <i>Self-criticism</i>         | .12      | .03       | .06               | .19*  |
| <i>Self-reassurance</i>       | .03      | .02       | .00               | .08*  |

FCS fears of compassion, FSCRS forms of self-criticising/attacking and self-reassuring scale

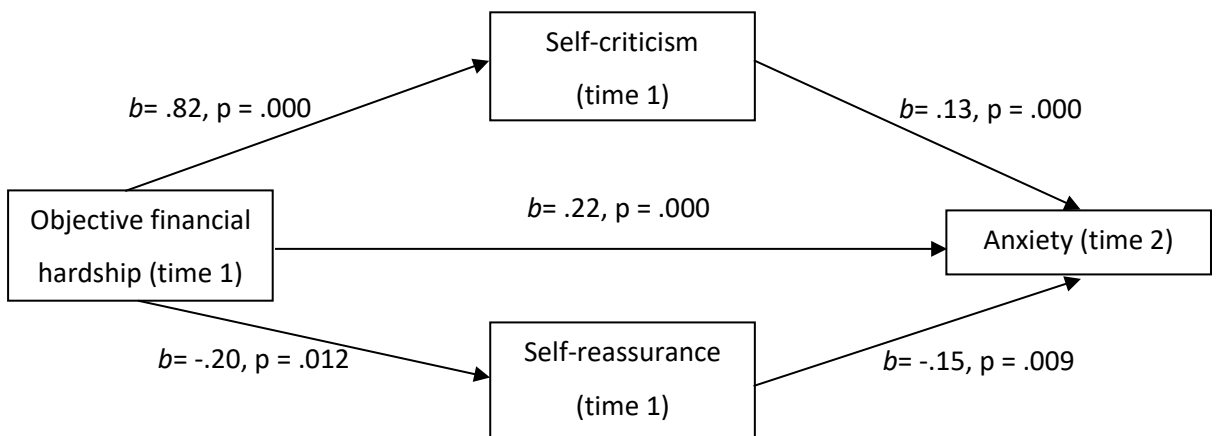
\*Indirect effect is significant at the .05 level

Figures 3, 4, 5, 6, 7, 8, 9 and 10 show the mediation results of the fears of compassion variables and the forms of self-criticising and self-reassurance for each mental health outcome separately.

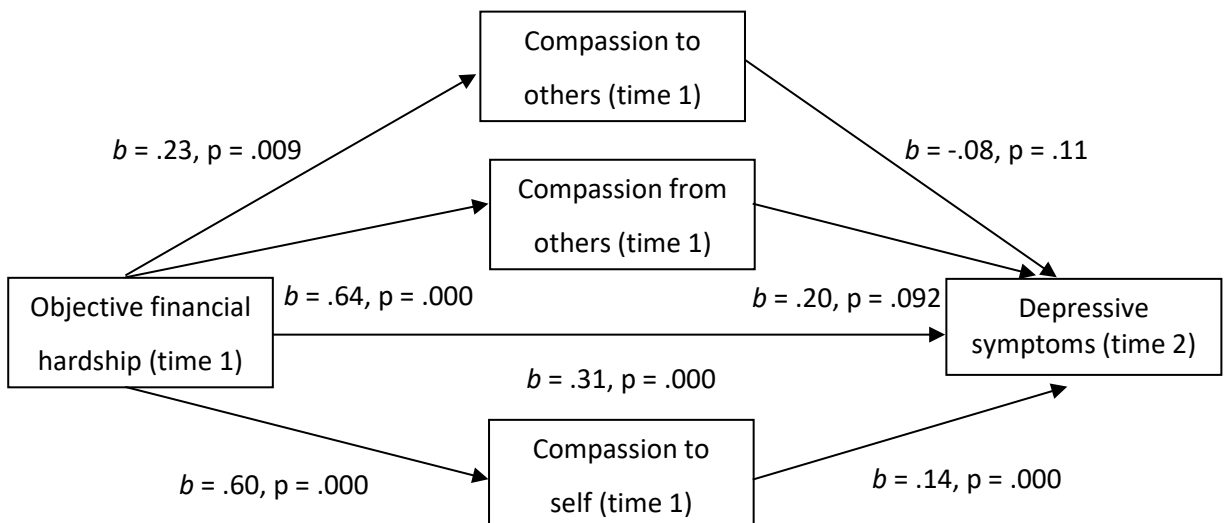
**Figure 3.** Path diagram of objective financial hardship through fears of compassion on anxiety



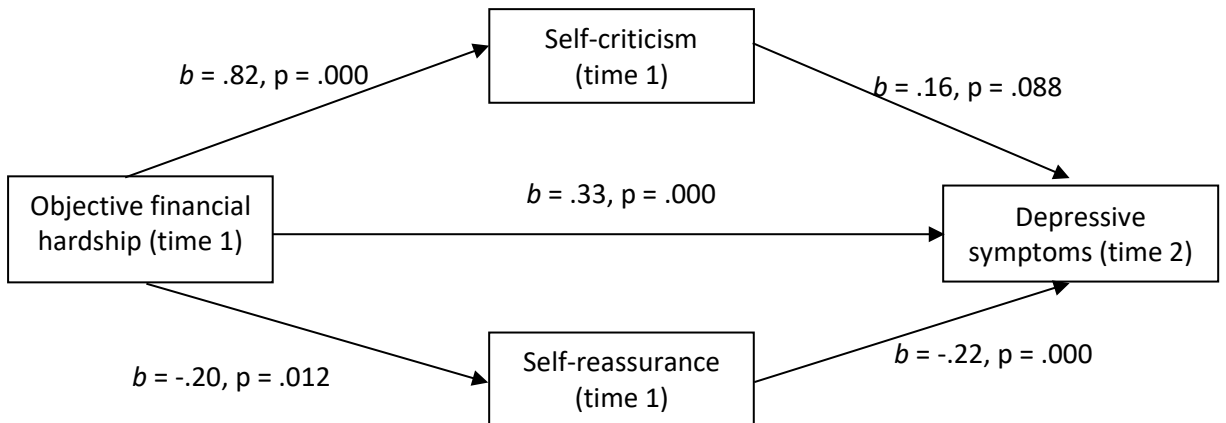
**Figure 4.** Path diagram of objective financial hardship through self-criticism and self-reassurance on anxiety



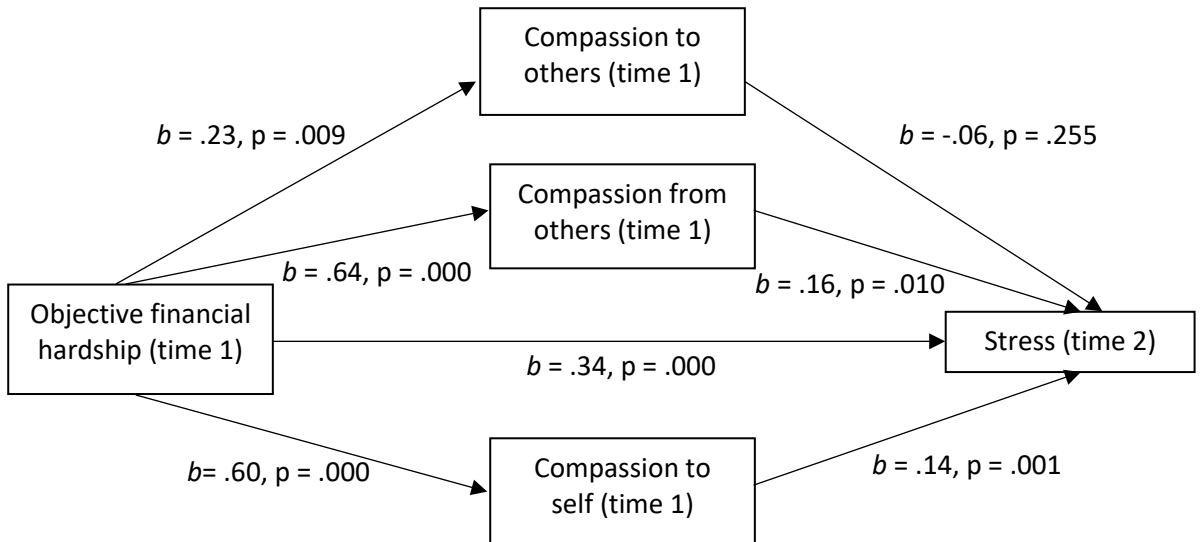
**Figure 5.** Path diagram of objective financial hardship through fears of compassion on depressive symptoms



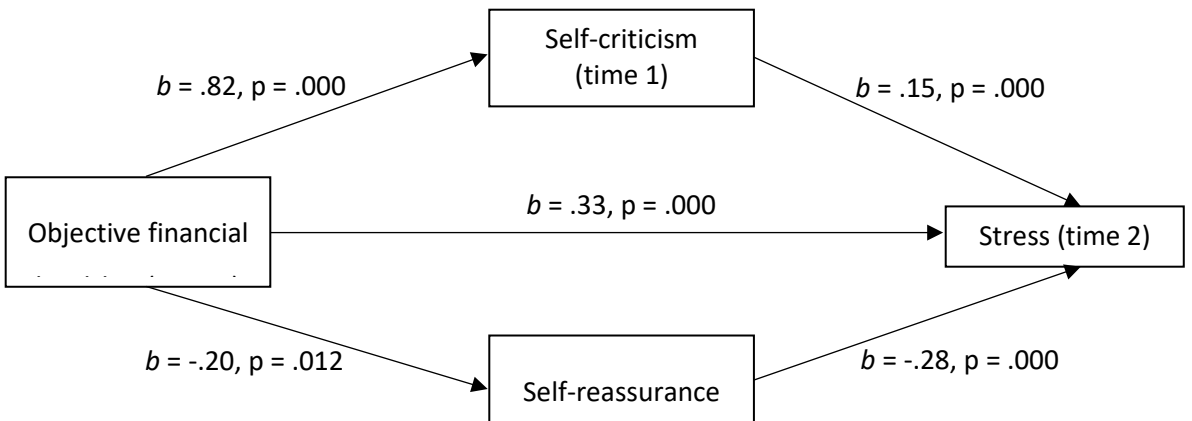
**Figure 6.** Path diagram of objective financial hardship through self-criticism and self-reassurance on depressive symptoms



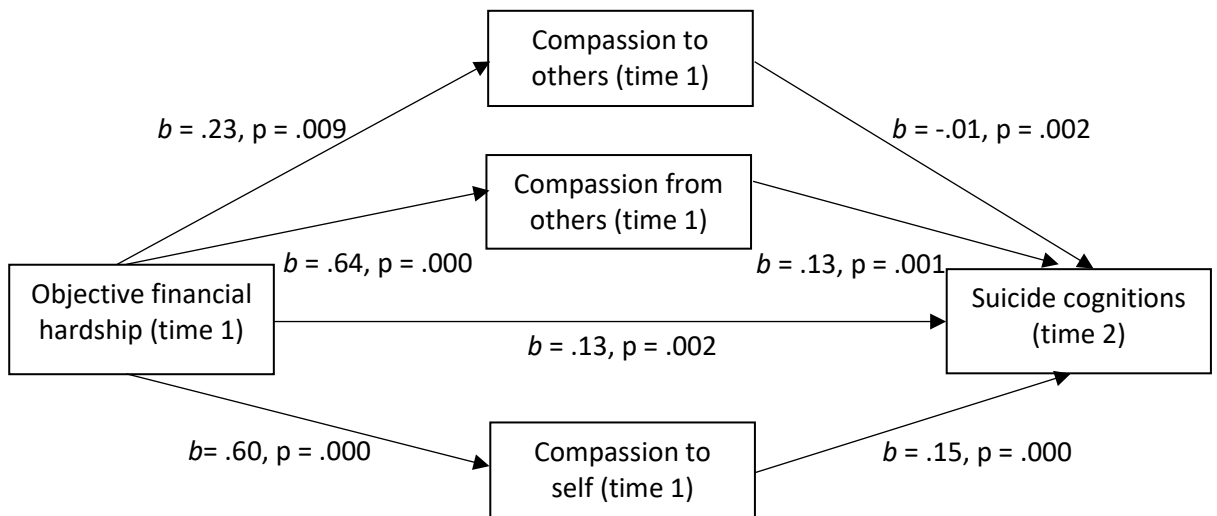
**Figure 7.** Path diagram of objective financial hardship through fears of compassion on stress



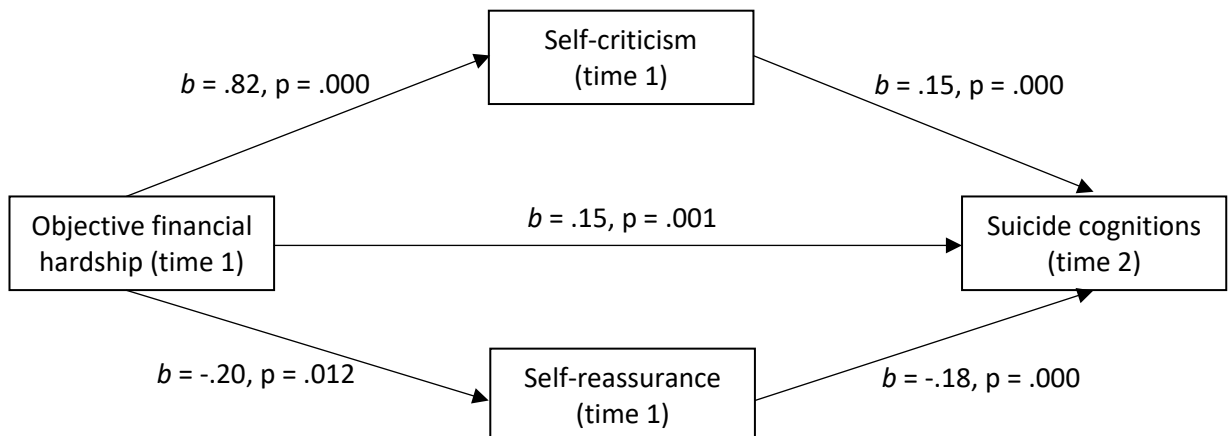
**Figure 8.** Path diagram of objective financial hardship through self-criticism and self-reassurance on stress



**Figure 9.** Path diagram of objective financial hardship through fears of compassion on suicide cognitions



**Figure 10.** Path diagram of objective financial hardship through self-criticism and self-reassurance on suicide cognitions



Figures 3, 5, 7 and 9 show that for anxiety, depressive symptoms, stress and suicide cognitions, objective financial hardship was positively associated with fears of compassion to others, compassion from others, and compassion to self. Thus, as objective financial hardship worsened, fears of compassion increased. Fears of compassion from others and fears of compassion to self partially mediated the relationship between objective financial hardship and anxiety, depressive symptoms, stress and suicide cognitions. Fears of compassion to others did not mediate this relationship. Figures 4, 6, 8 and 10 show that for anxiety, depressive symptoms, stress and suicide cognitions, objective financial hardship is positively related to self-criticism and negatively related to self-reassurance. Thus, as objective financial hardship worsened, self-criticism increased and self-reassurance decreased. Self-criticism and self-reassurance both partially mediated the relationship between objective financial hardship and anxiety, depressive symptoms, stress and

suicide cognitions. All mediation analyses showed a significant direct effect of objective financial hardship on all mental health outcomes (anxiety, depressive symptoms, stress and suicide cognition).

## **2.4 Discussion**

### **2.4.1 Main findings**

This study sought to investigate the role of compassion on the relationship between financial hardship and mental health. It hypothesized that greater financial hardship at time one would predict worse mental health at time two. Whilst initial correlations demonstrated that both objective and subjective financial hardship were correlated with all mental health outcomes, a hierarchical regression analysis showed that objective financial hardship significantly predicted some mental health outcomes but subjective financial hardship did not. The mental health outcomes predicted by objective financial hardship included anxiety, depressive symptoms, stress and suicide cognition, but not global mental health. The finding that objective financial hardship predicts mental health supports the extensive existing literature which has shown the relationship between socioeconomic conditions, including objective financial hardship and socioeconomic status (SES), and mental health. This relationship has been repeatedly established in the UK, including in the 2017 Health Survey for England which found that people in the lowest socioeconomic class have the highest risk of having a mental health problem (NHS Digital, 2018). The longitudinal design of this study enhances the inferences of causality in ways that existing cross-sectional studies cannot. These findings show that objective financial hardship leads to poorer mental health over time. The finding that subjective financial hardship did not significantly predict mental health outcomes is contrary to several other studies which found subjective hardship to be a stronger predictor of mental health than objective financial hardship (Frankham et al., 2020; Marjanovic et al., 2015; Sinclair et al., 2010). One possible reason for this may be that the objective financial hardship measure used in this study has several items and allows for a substantial range of scores so may be more sensitive to change than measures used in other studies. Several studies have measured objective financial hardship as a simple 'yes' or 'no' question (Baranov et al., 2022; Feter et al., 2021; Hagen et al., 2023; Hertz-Palmor et al., 2021).

Whilst the relationship between financial difficulties and mental health is relatively well established, there is a recognised need for further research into the mechanisms present within this relationship. This study sought to do this by investigating the role of compassion within this relationship, using a theoretically driven and clinically informative conceptualisation of compassion. It hypothesized that lower compassion will be correlated with greater financial

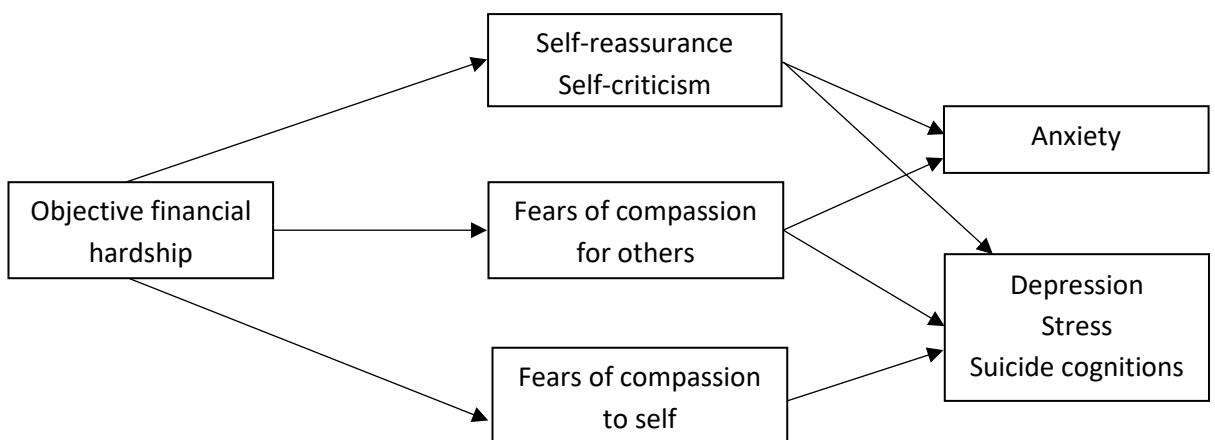


## Appendix A

hardship at time one and that poorer mental health will be correlated with lower compassion. Bivariate correlations supported these hypotheses as it indicated that all included aspects of compassion (fears of compassion to others, from others and to self; self-reassurance and self-criticism) were correlated with both objective and subjective financial hardship, and that all mental health outcomes (anxiety, depressive symptoms, stress, global mental health and suicide cognition) were correlated with these aspects of compassion.

In terms of mediation, this study hypothesised that compassion will mediate the relationship between financial hardship at time one and mental health outcomes at time two. The findings of this study partially support this hypothesis as the mediation analyses indicated that fear of compassion from others partially mediated the relationships between objective financial hardship and anxiety, depressive symptoms, stress and suicide cognitions. These analyses also indicated that fears of compassion to self partially mediated the relationship for depressive symptoms, stress and suicide cognitions, but not anxiety. However, fears of compassion to others did not mediate this relationship. This hypothesis was further supported by the finding that self-criticism and self-reassurance partially mediated the relationship between objective financial hardship and all mental health outcomes. The final hypothesis of this study was that greater financial hardship at time one will negatively affect mental health outcomes at time two via the mediators of compassion. Mediation analyses and the subsequent path diagrams (figures 3-10) demonstrated that these analyses supported this hypothesis. Figure 11 depicts a proposed model of the mediatory influences of the psychological variables in the relationship between objective financial hardship and mental health outcomes.

**Figure 11.** Proposed model of compassion for others, compassion to self, self-criticism and self-reassurance mediating the relationship between objective financial hardship and mental health



### 2.4.2 Limitations

The strengths of this study includes the longitudinal design, although the time points were only over three months. The use of standardised measures for both mental health outcomes and financial hardship is another strength of this study, particularly as many studies determine financial hardship from a single item. Another strength of this study is that a large sample size was recruited at time one, which meant that after attrition, the final analytical sample size was still relatively large. Thus, the findings are unlikely to be underpowered.

A key limitation of this study is the generalisability of the findings due to several factors. Firstly, participants were disproportionately female (81.1%), from a white ethnic background (78.8%) and students (52.7%). Data from the Global Monitoring Database (GMD) indicates that the female poverty rate is higher than that of men, at 12.8% rather than 12.3% (Boudet et al., 2018). As such, an implication of this disproportionate sample is that male experiences of financial hardship may not be accurately described by these findings. A recent House of Commons report on poverty in the UK showed that households from a white ethnic background experienced the lowest rates of poverty (Francis-Devine, B. 2023). The high proportion of white participants in this sample therefore means that these findings may not accurately reflect the experiences of people from other ethnic backgrounds. Similarly, the high proportion of students (52.7%) in the sample may affect the extent to which these findings can be generalised to the general working population. Whilst there has been extensive previous research regarding finances and mental health in the student population, this study adds to this literature. Finally, the proportion of participants scoring above the cut-off point for moderate or severe anxiety on the GAD-7 at Time 1 was 34.2% (n = 76). This is higher than what would be expected in the general population, again possibly impacting the generalisability of these findings.

The use of two timepoints as opposed to three, as originally planned, poses limitations for the statistical analyses conducted in this study, and the subsequent findings. It is widely accepted that longitudinal mediation is more robust than cross-sectional and that a minimum of three timepoints is preferred. Within this study, both the independent variable (objective financial hardship) and the mediators (fears of compassion to others, from others and to self, and self-criticism and self-reassurance) are measured at timepoint one. This means that there is no temporal lag between the independent variable and the mediators, which could impact the results. There is, however, a temporal lag between mediators and the dependent variables which were measured at timepoint two (anxiety, depressive symptoms, stress and suicide ideation).

Finally, the recruitment and data collection methods of the study pose some limitations. This includes the fact that data were exclusively collected through self-report measures which may

have resulted in different forms of response bias. The recruitment methods mean that it is likely that individuals without access to computers, internet and/or social media platforms have been under-represented in this study sample.

### **2.4.3 Clinical implications**

The findings of this study add to the existing evidence base demonstrating the relationship between financial difficulties and mental health, a relationship which has been shown to be bidirectional (Ten et al., 2021). Poorer mental health outcomes due to increased fears of compassion, self-criticism and reduced self-reassurance resulting from objective financial hardship may pose enduring consequences on individual and societal levels. Research on this topic seems particularly relevant in the current socioeconomic context, including the impact of the COVID-19 pandemic and the international cost of living crisis. The COVID-19 pandemic has caused the largest contraction in economic activity since the Great Depression (United Nations Development Programme, 2020). In this study, more than half of participants (57.2%) reported increased worry about their financial situation following the COVID-19 pandemic. Government policies and provision of timely and sufficient financial support to prevent individual experiencing significant financial hardship may be imperative to preventing worsening mental health outcomes as a result of this financial hardship.

In terms of clinical interventions, the mediatory effects of fears of compassion, self-criticism and self-reassurance are likely to be effectively targeted by Compassion Focused Therapy (CFT). CFT aims to reduce an individual's distress by addressing patterns of shame and self-criticism, and developing self-compassion and the ability to accept compassion from others (Gilbert, P., 2009). Future research is needed to establish whether Compassion Focused Therapy (CFT) can mitigate the impact of financial distress on people's mental health.

### **2.4.4 Recommendations for future research**

There remains a significant need for future research investigating the mechanisms within the association between economic difficulties and mental health, including a particular focus on the causal relationship that has been demonstrated in research. Whilst this study aimed to over-recruit participants from groups who are at particular risk of either financial or mental health difficulties, these groups were likely under-represented in the study sample. Future research should be conducted that is representative of these groups, such as people experiencing homelessness or single parents. Future research on the role of compassion in this relationship should aim to use longitudinal designs of sufficient length and frequency to detect changes in

mental health and compassion variables. Research using different measures of compassion could contribute to a more comprehensive and nuanced understanding of the role of compassion in the relationship between financial hardship and mental health, for example the Compassionate Engagement and Action Scales (CEAS; Gilbert et al., 2017).

#### **2.4.5 Conclusion**

In summary, fears of *compassion from others* partially mediated the relationships between objective financial hardship and anxiety, depressive symptoms, stress and suicide cognitions. Fears of *compassion to self* partially mediated the relationship between objective financial hardship and depressive symptoms, stress and suicide cognitions, but not anxiety. Fears of *compassion to others* did not mediate this relationship. *Self-criticism* and *self-reassurance* both partially mediated the relationship between objective financial hardship and anxiety, depressive symptoms, stress and suicide cognitions. The findings of this study indicate that the experiences of fears of compassion, self-criticism and self-reassurance may partially mediate the relationship between objective financial hardship and mental health outcomes. As such, there is a need for further research to understand these relationships. Given the current socioeconomic context which has markedly increased financial difficulties for individuals across the world, understanding the means by which these difficulties may increase vulnerability to worsening mental health is of great significance in order to enable effective policy, prevention and support be implemented.

## **Appendix A    Data extraction table**

**Table A1 Data extracted from studies**

Appendix A

| Author(s), date of publication, country | Study time period & relevant COVID-19 & lockdown phase   | Analytic sample  | Mental health variable(s) assessed and measure(s) used           | Variable of financial change due to COVID-19 and measure(s) used   | Main (relevant) findings  | Overall quality assessment tool rating |
|---|--|--|--|--|---|--|
| Badellino et al. (2021), Argentina      | T1: 29 <sup>th</sup> March – 12 <sup>th</sup> April 2020<br>T2: 23 <sup>rd</sup> May – 12 <sup>th</sup> June 2020, first wave peaked in October 2020, national lockdown began late-March | General population sample of adults living in Argentina without having previous mental disorder and/or dyslexia.<br>T1: <i>N</i> = 1985, 1505 females, 480 males/other; age: <i>M</i> = 36.83 years, <i>SD</i> = 14.4<br><br>T2: <i>N</i> = 2839, 2137 females, 702 males/other; age: <i>M</i> = 27.95 years, <i>SD</i> = 12.23<br><br><i>N</i> = 853 respondents participated in both T1 and T2 | <b>Depressive symptoms:</b> Patient Health Questionnaire (PHQ-9) | <b>Financial worries:</b><br>1. ‘How concerned have you been about your financial situation in the last month?’ A Likert scale from 1 to 10 (0 = no concern and 10 = maximum concern) was used, and the level of concern was ranked as mild (0–4), moderate (5–7) or maximum (8–10)<br><br>2. Question about Concern regarding ‘running out of money to pay expenses, rent and taxes.’ Likert scale from 1 to 4 (1 = not concerned; 2 = little concerned; 3 = concerned; 4 = very much concerned). | Significant increase in the prevalence and average score of depression in Argentine population between late-March and mid-June 2020.<br>Respondents who expressed concern about running out of money were at a significant risk for depression.<br>Unemployed participants, who feel more worried about job changes and who were at risk of (or at least concerned about) running out of money to meet their usual expenses, were the most susceptible to depression. | Poor                                   |

Appendix A

|                                    |  |  |   |   |   |      |
|------------------------------------|--|--|---|---|---|------|
| Baranov et al. (2022), Pakistan    | T1: November - December 2019<br>T2: July 2020, 'height of the pandemic' (first peaked in mid-June 2020 in Pakistan), national lockdown ended mid-May and partial restrictions continued  | Parents of a school-going child (aged 10-14 years) (N = 883; 725 females, 158 males; age: M = 37 years)  | <b>Psychological distress</b> (Kessler-10 [K10] questionnaire)  | <b>Economic impact:</b> Job loss was used as a proxy for economic impact (respondents were asked if they or their partner lost their job due to the COVID pandemic)                               | COVID-19-related economic impact was significantly associated with increased psychological distress<br>While mental health has not deteriorated overall from baseline during the lockdowns for adults, for those who have suffered economically, it has significantly worsened.   | Fair |
| Batterham et al. (2021), Australia | Seven time points between March – June 2020 (fortnightly surveys), first peak in March/April, national lockdown began in late March, restrictions were eased in early May but local lockdowns and international quarantine continued | General population sample representative of the Australian adult population by age group, gender, and state/territory (quota sampling) (N at T1 = 1296, N at T7 = 762 [59%]; 649 females, 647 males; age: M = 46.0 years, SD = 17.3) | 1. <b>Depressive symptoms</b> Patient Health Questionnaire (PHQ-9)<br>2. <b>Anxiety symptoms</b> Generalised Anxiety Disorder (GAD-7) | <b>Financial distress:</b> 'Over the last 2 weeks, to what extent have you experienced financial distress related to COVID-19?' (Not at all/A little/Somewhat/Quite a lot/Considerably/Extremely) | Mean levels of depression and anxiety symptoms early in the COVID-19 pandemic were higher than estimated by earlier Australian population-based surveys, but most adults did not experience changes in mental health symptoms during the first three months of the pandemic.<br>COVID-19-related financial distress was positively associated with higher depression and anxiety at baseline. | Fair |
| Bierman et al. (2021), Canada      | T1: March 2020<br>T2: April 2020<br>T3: May 2020<br>T4: June 2020 (monthly surveys), first wave peaked on 30 May 2020, partial national lock-down  | Adults working at time of baseline measures (retained in the sample in subsequent waves if they became unemployed) (N at T1 = 2456, N at T4 = 1809 (74%); 1194   | <b>Psychological distress</b> Shortened version of the Kessler-6 [K6] scale   | <b>Economic hardship:</b> Measured using 3 questions:<br>1. 'How often in the past month did you have trouble paying bills?'<br>2. 'How   | Positive association between economic hardship prior to the pandemic and periods of economic hardship during the pandemic.<br>Economic hardship experienced during the COVID-19 pandemic degraded mental health, even when prior mental health and economic hardship was taken into account. Psychological  | Good |

Appendix A

began in mid-March 2020 females, 1262 males; age:  $M = 41.94$  years)

often in the past month distress predicted economic hardship during the pandemic.

did you not have enough money to buy food, clothes or other things your household needed?’

3. How did your finances work out in the past month?

|                                      |   |   |   |   |  |      |
|--------------------------------------|---|---|---|---|--|------|
| Canet-Juric et al. (2020), Argentina | T1: late-March 2020 (12-15 days between surveys), first wave peaked in October 2020, survey launched two days after national lockdown began | General population - 181 years and older, not suffering from physical or psychological illnesses. ( $N = 6057$ ; 4886 females, 1131 males, 20 ‘other’, 20 ‘prefer not to answer’; age groups: 18-25 = 929, 26-40 = 2910, 41-60 = 1803, 60+ = 415) | <p><b>Depressive symptoms</b></p> <p>Beck Depression Inventory (BDI-II)</p> <p>2. <b>State anxiety</b></p> <p>State-Trait Anxiety Inventory (STAI)</p> <p>3. <b>Affect</b></p> <p>Positive and Negative Affect Schedule (PANAS)</p> | <p><b>Perception of economic impact</b></p> <p>Question regarding variation in economic income due to quarantine (response options: no, few, some, much, very much)</p>           | <p>After 2 weeks of quarantine, depression increased, and anxiety and negative and positive affect decreased, all with small effect sizes.</p> <p>Depressive symptoms increased due to economic hardship.</p> <p>Lower economic impact was positively associated with more positive affect at both time points.</p> <p>People who reported no economic impact showed higher positive affect, but larger decrease in positive affect over time.</p> | Poor |
| Choi et al. (2023), USA              | T1: 2016 (biennial interviews), upswing of first peak, partial restrictions in most states  | Nationally representative sample of adults aged 51 years and older and their spouses or cohabiting partners of any age.   | <p><b>Affect</b></p> <p>International Positive and Negative Affect Schedule Short-Form (I-PANAS-SF)</p>   | <p><b>Financial hardship</b></p> <p>Measured as a count and included missing any regular payment on (a) rent or mortgage, (b) credit cards or other debt, or (c) utilities or</p> | <p>During the COVID-19 pandemic, financial hardship was related to increased negative affect and decreased positive affect among, after adjusting for emotional well-being at baseline, and sociodemographic characteristics and health variables at follow-up during the pandemic.</p>  | Good |



(*N* = 1312; 550 females, 762 males; age: *M* = 69.8 years)

insurance; or any indication of difficulty (d) paying medical bills or (e) having enough money to buy food. Observed values ranged from 0 to 5.

|   |  |   |  |  |  |
|---|--|---|--|--|--|
| <p>Feter et al. (2021), Southern Brazil (Rio Grande do Sul state)</p> | <p>T1: June – July 2020 but participants were asked to complete MH measure using the period before the COVID-19 pandemic as reference.<br/>T2: June – July 2020 (retrospective longitudinal design), up to 73.4% of state population were in the second highest level of social distancing restriction</p> | <p>General population sample of adults (<i>N</i> = 2321; 1776 females, 540 males [<i>n</i> = 2319]; age groups: 18-30 = 858, 31-59 = 1246, 60+ = 196 [<i>n</i> = 2300])</p> | <p>1. <b>Depressive symptoms</b><br/>Hospital Anxiety and Depression Scale (HADS)<br/>2. <b>Anxiety</b><br/>Hospital Anxiety and Depression Scale (HADS)</p> | <p><b>Economic impact</b><br/>‘Did social distancing affect your monthly income?’<br/>In case of an affirmative response, participants asked whether income decreased or increased during the COVID-19 pandemic.</p> | <p>Prevalence of moderate-to-severe anxiety and depression increased 7.4x and 6.6x, respectively, after the implementation of COVID-19 social distancing restrictions. A negative economic impact was reported by 45.3% (95% CI: 42.7%, 47.8%) of the respondents. COVID-19- related income loss was positively associated with higher depression and higher likelihood of more severe anxiety symptoms.</p> |
| <p>Graupensperger et al. (2022), USA</p>                              | <p>T1: January 2020<br/>T2: April-May of 2020<br/>T3: six bimonthly follow-ups from September- October 2020 until July-August</p>  | <p>Young adults who were aged 18–23 years at screening in 2015-2016. (Sample for T1 &amp; T2: <i>N</i> = 519; 326 females, 193 males/other; age:</p>                        | <p>1. <b>Depressive symptoms</b><br/>Two- or eight-item Patient Health Questionnaire (PHQ-2 or PHQ-8)</p>  | <p><b>Financial stress</b><br/>‘How concerned are you about the novel coronavirus (COVID-19)...’</p>   | <p>Depression symptoms increased between pre- and early-pandemic. Worse mental health and well-being from pre-pandemic to early-phase-pandemic were positively associated with increased stress in several life domains (e.g., financial stressors and job insecurity stressors.)</p>  |

Appendix A

|   |  |  |  |  |   |      |
|---|--|--|--|--|---|------|
|   | 2021; T2: acute early phase, partial restrictions in most states, T3: increase in cases over winter and in July 2021, partial restrictions in most states  | $M = 25.4$ years, $SD = 1.84$<br>(Sample for T3: $N = 566$ , 350 females, 216 males/other; age: $M = 25.8$ years; $SD = 1.83$ )                            | 2. <b>Anxiety</b><br>Two- or seven-item Generalized Anxiety Disorder Scale (GAD-2 or GAD-7)  | Measured on a 5-point Likert-type scale with responses ranging from 'not at all' to 'extremely'  | Financial stress was uniquely positively associated with symptoms of depression and anxiety across the bimonthly surveys.   |      |
| Hagen et al. (2023), Norway   | T1: April 2020<br>T2: December 2020, increasing cases, national restrictions began mid-March 2020  | General population sample of adults living in Norway<br>( $N = 6017$ ; 4680 females, 1292 males, 45 other gender; age: $M = 34.68$ years, $SD = 13.75$ )   | 1. <b>Depressive symptoms</b><br>Patient Health Questionnaire-9 (PHQ-9)<br>2. <b>Anxiety</b><br>Generalized Anxiety Disorder-7 (GAD-7) | <b>Negative economic impact</b><br>Self-reported (yes/no)  | Anxiety and depression slightly worsened during the first wave of the pandemic, during national lockdown.<br>People without pre-existing mental health conditions showed a subclinical increase in symptoms, while people with a pre-existing mental health condition disorder before the pandemic reported the highest levels of anxiety and depression.<br>Economic impact was not associated with either depressive or anxiety symptoms.   | Poor |
| Hertz-Palmor et al. (2021), (study 1), International but majority from USA and Israel | T1: 6 <sup>th</sup> April – 5 <sup>th</sup> May 2020<br>T2: 12 <sup>th</sup> May – 21 <sup>st</sup> June 2020, USA: first wave, partial restrictions in most states; Israel: first wave between March-April, gradual easing of restrictions from early May | General population sample of adults<br>( $N = 1318$ ; 1077 females, 241 males; age $M = 40.79$ years, $SD = 13.55$ )<br>(Reported income loss: $n = 246$ ) | 1. <b>Depressive symptoms</b><br>Patient Health Questionnaire-2 (PHQ-2)<br>2. <b>Anxiety</b><br>Generalized Anxiety Disorder-7 (GAD-7) | 1. <b>Income loss</b><br>Asked whether they had lost their job or whether their pay/hours were reduced since the beginning of the outbreak.<br>Collapsed into a binary income loss measure (yes/no)<br>2. <b>Financial worry</b> | Income loss due to the COVID-19 pandemic was positively associated with more anxiety and depressive symptoms, but was associated more strongly with depression than anxiety symptoms.<br>The increase in anxiety symptoms was steeper than that of depression symptoms.<br>There was a positive association between financial worry and depression, whilst controlling for pre-COVID-19 income. This suggests that objective financial situation only partly explains variability in depressive | Fair |

|   |   |   |   |  |  |      |
|---|---|---|---|--|--|------|
|   |   |   |   | Measured on a 5-point Likert-type scale (from not at all to a great deal)  | symptoms, and that worries about the financial situation may be a sensitive marker for depressive symptoms during the pandemic.  |      |
| Hertz-Palmor et al. (2021), (study 2), Israel | T1: 18 <sup>th</sup> – 26 <sup>th</sup> March 2020<br>T2: 22 <sup>nd</sup> April – 7 <sup>th</sup> May,<br>first wave between March-April, gradual easing of restrictions from early May        | General population sample of adults living in Israel<br>( <i>N</i> = 241; 166 females, 75 males; age: <i>M</i> = 37.32 years, <i>SD</i> = 12.26; reported income loss: <i>N</i> = 102)  | 1. <b>Anxiety</b><br>Patient-Reported Outcomes Measurement Information System (PROMIS) – anxiety items<br><br>2. <b>Depressive symptoms</b><br>Patient-Reported Outcomes Measurement Information System [PROMIS] – depression items | 1. <b>Income loss</b><br>Measured on a 5-point Likert-type scale (no income loss to extreme income loss)<br><br>2. <b>Financial worry</b><br>Measured on a 4-point Likert-type scale (from ‘not at all’ to ‘always’) | COVID-19-related income loss and financial worry was positively associated with depression.<br>COVID-19-related income loss contributed to initial depressive response and its amplification over time, with a 1-month exacerbation in depressive symptoms associated with worsening in income loss.<br>COVID-19 stress was positively associated with depression but increase in financial worry did not cause an increase in depressive symptoms.      | Fair |
| Lee et al. (2022), Singapore                  | T1: 2017<br>T2: June 2020<br>(Contacted if prior measures completed minimum of 6 months prior), two peaks during March and April, strict national restrictions which began to ease in June 2020 | Older Asian adults of Chinese, Malay, or Indian ethnicity, aged 60 years and older (without severe cognitive, hearing, or speech impairment)<br>( <i>N</i> = 496; 272 females, 224 males; age <i>M</i> = 73.8 years, <i>SD</i> = 7.6) | <b>Depressive symptoms</b><br>Patient Health Questionnaire (PHQ)  | 1. <b>Financial hardship</b><br>The Economic Hardship Questionnaire (EHQ) with two items removed as these activities could not be undertaken due to lockdown measures<br><br>2. <b>Changes in lifestyle</b>          | Over a quarter of the sample experienced a decrease in family income, with one-fifth experiencing financial problems.<br>Slight reduction in depressive symptoms (after adjusting for covariables) during a 2-month COVID-19 lockdown.<br>Financial hardship was positively associated with depressive symptoms.<br>Common lifestyle changes made due to financial constraints included: cutting back on charitable contributions (22.3%), changing food | Good |

|  |  |  |   |  |  |      |
|--|--|--|---|--|--|------|
|  |  |  |   | Due to financial constraints associated with the lockdown (eight items, individual scores used in analyses)  | shopping or eating habits to save money (11.5%) and reducing household utility use (9.7%).   |      |
| Murray et al. (2023), Pelotas, city in Southern Brazil | T1: 2015 - 2019<br>T2: May - September 2020, Pelotas experienced sharp increase in cases, 1 week lockdown, then partial social distancing restrictions | Mothers of 99.9% of all children born in Pelotas in 2015<br>(N = 2083; 2083 females; age groups: < 20 = 283<br>20-34 = 1492<br>≥ 35 = 308) | 1. <b>Maternal depressive symptoms</b><br>3 items from the Edinburgh Postnatal Depression Scale (EPDS) that had the strongest associations with a total depression score. All items are rated on a 4-point scale.<br>(Measured in 2019 and T2)<br><br>2. <b>Maternal anxiety</b><br>Generalized Anxiety Disorder (GAD-7)<br>(Measured in 2016 and T2) | 1. <b>Income loss</b><br>Asked whether family income in the last month 'got a lot worse,' 'got a little worse,' 'stayed the same,' or 'got better'. Coded as 'yes' ('got a lot worse') or 'no' for analyses.)<br><br>2. <b>Emergency welfare receipt</b><br>Only made to families with financial difficulties. Coded as 'yes' or 'no' to question asking whether this had been received by someone in the household. | During the COVID-19 pandemic, maternal depressive symptoms increased substantially, while there were small decreases in maternal anxiety.<br>Both COVID-19-related income loss and emergency welfare receipt during the pandemic were positively associated with maternal depression and maternal anxiety, after adjusting for both baseline levels of these variables and pre-pandemic family income. | Good |
| Shuster et al. (2021), USA                             | Weekly surveys for 10 weeks between 2 <sup>nd</sup> April – 4 <sup>th</sup> June 2020, first wave of COVID-  | General population sample of USA residents aged between 18–64  | 1. <b>Depressive symptoms</b><br>Zung Self-Rating Depression scale  | <b>Economic impact</b><br>'Rate the impact that COVID-19 has had on your economic  | Depression and anxiety initially peaked but then declined over 10 weeks during the first wave of COVID-19.   | Fair |

|                                    |  |  |  |   |   |
|------------------------------------|--|--|--|---|---|
|                                    | 19, partial restrictions (N = 743; 359 in most states  | females/other, 384 males; age: M = 37.1 years)   | 2. <b>Anxiety</b><br>State Anxiety Inventory   | situation' (rated from very negative impact, -50 to very positive impact, +50, scaled to be between -0.5 and 0.5 for analysis)  | COVID-19-related economic impact was positively associated with depressive and anxiety symptoms.  |
| Simonse et al. (2022), Netherlands | T0: April – November 2018<br>T1: December 2019 – March 2020<br>T2: December 2020 – March 2021, T2: increasing cases of new variant, national lockdown in place | Population representative sample of residents (T0: N = 1114; 613 females, 501 males/other; age: M = 53.0 years, SD = 17.8) (T1: n = 838; 451 females, 387 males/other; age: M = 54.5 years, SD = 16.9) (T2: N = 736; 390 females, 346 males/other; age: 55.6 years, SD = 16.6) | <b>Mental health</b><br>Mental Health Index (MHI-5)  | <b>Financial stress</b><br>Psychological Inventory of Financial Scarcity (PIFS); responses range from 1 (totally disagree) to 7 (totally agree).  | Mean levels of mental health did not change in the first six months of the pandemic compared to the pre-pandemic situation. This, however, masked underlying heterogeneity as for four out of five respondents, mental health either increased or decreased. Increase in financial stress predicted worsened mental health, whereas decreases in financial stress predicted improved mental health. Financial stress mediated the relation between savings and debts together, and mental health. |
| Strizzi et al. (2023), Denmark     | T1: October – November 2020<br>T2: March - May 2021, increasing cases, national restrictions began 12 <sup>th</sup> March 2020                                 | Sample drawn from nationally representative sample of 5,000 Danish residents over the age of 18 invited to participate (N = 1,302) (T1: n = 914; 493 females, 421 males;   | 1. <b>Depressive symptoms</b><br>Patient Health Questionnaire 9-item (PHQ-9)<br><br>2. <b>Anxiety</b><br>Generalized Anxiety Disorder 7-item (GAD-7) | <b>Loss of income:</b><br>'Since the COVID-pandemic, have you personally experienced a loss of income?' (response options: 1 = yes, a total loss of income, 2 = yes, a partial loss of income, 3 = no loss of income, 4 = symptoms. | Mean levels of anxiety and depressive symptoms did not change during the first year of the COVID-19 pandemic and did not differ from those of matched controls assessed before the pandemic. After adjusting for sociodemographic variables (e.g., age, gender, relationship status) COVID-19-related income loss was positively associated with depression and anxiety   |

age:  $M = 51.29$  years,  $SD = 16.67$ )

(T2:  $N = 304$ ; 154 females, 150; age:  $M = 56.38$  years,  $SD = 15.82$ )

(Both T1 and T2:  $N = 84$ ; 47 females, 37 males; age:  $52.22$  years,  $SD = 14.05$ )

I had no personal income before COVID-19.)

For analysis, the response options were dichotomized as follows: 0 = no loss of income (3–4) and 1 = a loss of income (1–2).

|                              |   |  |  |   |   |
|------------------------------|---|--|--|---|---|
| Weber et al. (2023), Germany | <p>T1: May 2020<br/>T2: September 2020<br/>T3: December 2020<br/>T4: March 2021<br/>T5: March 2022,<br/>T3 = height of COVID-19-related death rate, first national lockdown on 23<sup>rd</sup> March – May 2020, second lockdown November 2020 – May 2021</p> | <p>General population sample of adults living in Germany<br/>(T1: <math>N = 636</math>; 535 females, 85 males, 15 diverse gender, 1 missing; age: <math>M = 39.5</math> years, <math>SD = 16.11</math>)<br/>(T5: <math>N = 216</math>; 176 females, 31 males, 9 diverse gender, 1 missing; age: <math>M = 40.48</math> years, <math>SD = 17.03</math>)</p> | <p>1. <b>Depressive symptoms</b><br/>Patient Health Questionnaire–9 (PHQ-9)<br/>2. <b>Anxiety</b><br/>Generalized Anxiety Disorder Scale–7 (GAD-7)</p> | <p><b>Financial worry:</b><br/>‘During the past 4 weeks, have you worried about your financial situation?’<br/>(responses include ‘not at all’, ‘not more than usual’, ‘more than usual’, ‘much more than usual’)</p> | <p>Symptoms of depression and anxiety, declined following the lifting of lockdown measures. Anxiety and depression peaked during the two national lockdown phases in Germany and dropped during the easing phases. Initial financial worry due to COVID-19 was positively associated with anxiety and depression at each time point. Initial financial worry due to COVID-19 was positively associated greater symptom decreases in anxiety and depression across the pandemic.</p> |
|------------------------------|---|--|--|---|---|

Abbreviations: T = time point (e.g., T1 = time point 1)

## Appendix B Demographic questionnaire

### Demographic questions:

**1. What is your gender?**

Female

Male

Other (please describe)

Prefer Not to Say

**2. What is your age?**

**3. What best describes your ethnic group or background?**

**White**

English / Welsh / Scottish / Northern Irish / British

Irish

Gypsy or Irish Traveller

Any other White background, please describe

**Mixed / Multiple ethnic groups**

White and Black Caribbean

White and Black African

White and Asian

Any other Mixed / Multiple ethnic background, please describe

**Asian / Asian British**

Indian

Pakistani

Bangladeshi

Chinese

Any other Asian background, please describe

**Black / African / Caribbean / Black British**

Black African

Black Caribbean

Black American

Any other Black / African / Caribbean background, please describe

**Other ethnic group**

Arab

Latina

Native American/Alaskan Native

Pacific Islander

Native Hawaiian

Any other ethnic group, please describe

**4. In which country do you currently reside?**

Drop-down box of countries

**5. What is your marital status?**

- Divorced
- Living with partner
- Married
- Separated
- Single
- Widowed

**6. What is the highest level of education you have completed?**

- Did not complete secondary school
- Secondary school (GCSEs/'O' levels)
- College ('A' levels)
- Vocational/technical school
- Higher Education Certificate
- Diploma
- Bachelor's degree
- Master's degree
- Doctoral degree
- Professional degree

**7. How would you describe your housing situation?**

- Home owned outright
- Home owner with a mortgage



## Appendix B

- Social rented housing (including housing associations)
- Private rented housing
- Temporary council-provided housing
- Permanent council-provided housing
- Living with family or friends without paying rent
- Sofa-surfing
- Other, please describe
- Unsure

### **8. What is your employment status?**

- Working full-time (30 hours per week or more)
- Working part-time (less than 30 hours per week)
- Self-employed
- Full or part-time student
- Retired
- Unemployed and looking for work
- Looking after the home/caring for family
- Unable to work because of ill health or disability
- Other, please describe

### **9. If you are working, how would you describe your occupation?**

- Higher managerial, administrative, professional, e.g. Chief executive, senior civil servant, surgeon
- Intermediate managerial, administrative, professional, e.g. bank manager, teacher
- Supervisory, clerical, junior managerial, e.g. shop floor supervisor, bank clerk, sales person
- Skilled manual workers, e.g. electrician, carpenter
- Semi-skilled and unskilled manual workers, e.g. assembly line worker, refuse collector, messenger
- Other, please describe

## Appendix C Financial circumstances questionnaire

### Financial Questions

*Note: For all items involving money, the default currency will be pound sterling but this questionnaire on Qualtrics will make use of the function which shows currencies according to where the participant has reported that they live. For example, the currency would be the US dollar in the participant has selected the United States of America as their country of residence. If this function is not possible then we will ask for participants to enter an amount in their own currency or select an amount that is in pound sterling or another particular currency.*

**1. What is your monthly income (after tax deductions) from employment? (Please do not include any income from financial support, such as benefits or Universal Credit, etc.)**

- 0 - £249
- £250 - £499
- £500 - £749
- £750 - £999
- £1000 - £1249
- £1250 - £1499
- £1500 - £1749
- £1750 - £1999
- £2000+
- Unsure

**2. Are you in receipt of benefits/welfare/financial support from the government?**

- Yes
- No
- Unsure

*If yes, then participants will be asked these questions:*

**2.1 What benefits/welfare/financial support are you in receipt of? (please tick all that apply)**

- Working Tax Credits
- Universal Credit
- Disability Living Allowance (DLA)
- Carer's Allowance
- Employment and Support Allowance (ESA)
- Income Support
- Jobseekers Allowance (JSA)
- Personal Independence Payment (PIP)
- Attendance Allowance
- Child Tax Credit
- Pension Credit
- Other
- Unsure

**2.2 What is your monthly income from benefits/welfare/financial support?**

- 0 - £249
- £250 - £499
- £500 - £749
- £750 - £999
- £1000 - £1249
- £1250 - £1499
- £1500 -£1749
- £1750 - £1999
- £2000+

**3. Do you currently have any of the following? (Please tick all that apply)**

- Loan from bank and/or building society (excluding mortgage)
- Loan from company that collects payments from home (e.g. Provident)
- Loan from a finance company (e.g. Ocean Finance)
- Goods bought in instalments from mail order catalogue
- Goods bought on 'hire purchase' (HP) or on credit (including
- Goods bought on a 'buy now, pay later' service (e.g. Klarna )
- Social Fund or Crisis Loan
- Loan from a payday lender (e.g. Wonga, cash converters)
- Loan from a credit union
- Loan from friends and family
- Loan from an individual (not friends or family)
- Other type of loan
- Unsure

**4. Thinking about loans only, approximately how much in total do you currently owe in loans?**

- Less than £500
- £500 or more, but less than £1000
- £1000 or more, but less than £2500
- £2500 or more, but less than £5000
- £5000 or more, but less than £10 000
- Between £10 000 and £20 000
- More than £20 000
- Unsure

**5. Which, if any, of the following do you currently have? (Please tick all that apply)**

- Credit card (eg, Mastercard or Visa)
- Store card (eg, JD Sports card or Debenhams card)
- None

**6. Thinking about these credit cards and store cards only, approximately how much in total do you currently owe on these cards? (Please tick one only)**

- Less than £500

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- £500 or more, but less than £1,000
- £1,000 or more, but less than £2,500
- £2,500 or more, but less than £5,000
- £5,000 or more, but less than £10,000
- More than £10,000
- Nothing at the moment
- Unsure

**7. Are you currently overdrawn on your bank/building society account?**

- Yes Please write in amount overdrawn (this can be approximate): £.....
- No
- Unsure

**8. Do you have a student loan?**

- Yes Please write in amount of current student loan (this can be approximate):  
£.....
- No
- Unsure

**9. Do you have a mortgage at present?**

- Yes
- No
- Unsure

*If yes, then participants will be asked these questions:*

**9.1 Have you been in arrears or unable to make a mortgage payment over the past year?**

- Yes
- No
- Unsure

**10. In the last 3 months, how often have you been unable to pay bills or financial commitments due to a lack of money? (Please tick one only.)**

- More often than not
- Often
- Sometimes
- Not often
- Never
- Unsure

**11. In the last 3 months, have you been two or more consecutive payments behind with any of the following bills? (Please tick all that apply)**

- Rent or mortgage payments
- Council Tax
- Gas or electricity bill

Appendix C

- Water bill
- Telephone bill (including mobile phone)
- Credit card or store card bill
- Loan repayments
- Repayments on goods bought on hire purchase or mail order
- TV licence
- Income Tax or VAT payments
- Other
- None of these
- Unsure

**12. In the last 3 months, have any of the following things happened to you because you were behind with your bills? (Please tick all that apply)**

- Threatened with legal or court action
- Received a County Court Judgement
- Had a charging order taken out against your home
- Contacted by bailiffs or debt collectors
- Lost your home through repossession or eviction
- Been declared bankrupt
- Other
- Unsure

**13. In the last 3 months how often have you had to go without meals because you couldn't afford to buy food? (Please tick one only)**

- More often than not
- Often
- Sometimes
- Not often
- Never
- Unsure

**14. In the last 3 months how often have you used a food bank or community pantry? (Please tick one only)**

- More often than not
- Often
- Sometimes
- Not often
- Never
- Unsure

**17. In the last 3 months, have you ever used less of the below goods or services than you needed, because you couldn't afford it? (Please tick all that apply)**

- Water
- Gas
- Electricity
- Telephone or mobile phone

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- Internet data
- Wi-Fi
- None of these
- Unsure

**18. In the last 3 months, how often have you ran out of money before the end of your budget time period (e.g. week or month, etc.)? (Please tick one box only)**

- Always
- Most weeks/months
- More often than not
- Sometimes
- Hardly ever
- Never
- Unsure

**19. In the last 3 months, have you gone without any of the following items because of a shortage of money? (Please tick all that apply)**

- Clothes
- Shoes
- Food/skipped meals
- Heating
- Lighting
- Baths/showers
- Travel (including fuel for driving and/or using public transport)
- Telephoning friends or family
- Going out/socialising
- A hobby or sport
- A holiday
- Other            Please state: \_\_\_\_\_
- Never go without
- Money is not in shortage
- Unsure

**20. Do you feel that you are in a better, worse or similar financial situation as you were before the start of the COVID-19 pandemic (early 2020)?**

- Better
- Worse
- Similar
- Unsure

**21. Do you feel that you are more, less or similarly worried about your financial situation as you were before the COVID-19 pandemic (early 2020)?**

- More worried
- Less worried
- Similarly worried
- Unsure

**22. If you reside in the UK, how worried are you about the increases in National Insurance tax that happened in April 2022?**

*(using a likert scale of 1-7, with 1 being 'not worried at all' and 7 being 'extremely worried')*

**23. How worried are you about the 'cost of living crisis' and the cost of basic goods (including groceries and petrol) increasing?**

*(using a likert scale of 1-7, with 1 being 'not worried at all' and 7 being 'extremely worried')*

**24. How worried are you about the 'cost of living crisis' and the cost of utilities (including gas and electricity) increasing?**

*(using a likert scale of 1-7, with 1 being 'not worried at all' and 7 being 'extremely worried')*

## Appendix D    Economic Hardship Questionnaire (EHQ; Lempers et al., 1989)

### Economic Hardship Questionnaire

For the following 10 questions choose one of the answers listed below:

A = never                      C = often  
B = sometimes                D = very often

*During the last 6 months*, how often did your family:

1. Cut back on social activities and entertainment expenses?                      A    B    C    D
2. Postpone major household purchases?                                      A    B    C    D
3. Postpone clothing purchases?                                      A    B    C    D
4. Change transportation patterns to save money?                      A    B    C    D
5. Change food shopping or eating habits to save money?                      A    B    C    D
6. Cut back on charitable contributions?                                      A    B    C    D
7. Reduce household utility use?                                      A    B    C    D
8. Sell some possessions?                                      A    B    C    D
9. Postpone medical care to save money?                                      A    B    C    D
10. Take additional employment to help meet expenses?                      A    B    C    D
11. Which of the following best described what has happened to your family income *during the past 6 months*?
  - A. Has increased very much;
  - B. Has increased somewhat;
  - C. Has stayed the same;
  - D. Has decreased somewhat;
  - E. Has decreased very much.
12. Which of the following best describes your family financially *at this time*:
  - A. No problems
  - B. Minor problems
  - C. Major problems
  - D. Extreme problems



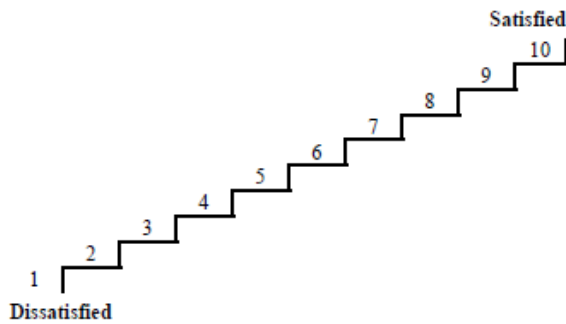
## Appendix E      InCharge Financial Distress/Financial Well-Being Scale ((IFDFW; Prawitz et al., 2006)

**Directions:** Circle or check the responses that are *most appropriate* for your situation.

1. What do you feel is the level of your financial stress today?

|                     |   |   |             |   |            |   |                  |   |    |
|---------------------|---|---|-------------|---|------------|---|------------------|---|----|
| 1                   | 2 | 3 | 4           | 5 | 6          | 7 | 8                | 9 | 10 |
| Overwhelming Stress |   |   | High Stress |   | Low Stress |   | No Stress at All |   |    |

2. On the stair steps below, mark (with a circle) how satisfied you are with your present financial situation. The “1” at the bottom of the steps represents complete dissatisfaction. The “10” at the top of the stair steps represents complete satisfaction. The more dissatisfied you are, the lower the number you should circle. The more satisfied you are, the higher the number you should circle.



3. How do you feel about your current financial situation?

|                  |   |                        |   |   |             |   |                  |   |    |
|------------------|---|------------------------|---|---|-------------|---|------------------|---|----|
| 1                | 2 | 3                      | 4 | 5 | 6           | 7 | 8                | 9 | 10 |
| Feel Overwhelmed |   | Sometimes Feel Worried |   |   | Not Worried |   | Feel Comfortable |   |    |

4. How often do you worry about being able to meet normal monthly living expenses?

|                    |   |                 |   |              |   |             |   |   |    |
|--------------------|---|-----------------|---|--------------|---|-------------|---|---|----|
| 1                  | 2 | 3               | 4 | 5            | 6 | 7           | 8 | 9 | 10 |
| Worry All the Time |   | Sometimes Worry |   | Rarely Worry |   | Never Worry |   |   |    |

5. How confident are you that you could find the money to pay for a financial emergency that costs about \$1,000?

|               |   |                   |   |                 |   |                 |   |   |    |
|---------------|---|-------------------|---|-----------------|---|-----------------|---|---|----|
| 1             | 2 | 3                 | 4 | 5               | 6 | 7               | 8 | 9 | 10 |
| No Confidence |   | Little Confidence |   | Some Confidence |   | High Confidence |   |   |    |

6. How often does this happen to you? You want to go out to eat, go to a movie or do something else and don't go because you can't afford to?

|              |   |           |   |        |   |       |   |   |    |
|--------------|---|-----------|---|--------|---|-------|---|---|----|
| 1            | 2 | 3         | 4 | 5      | 6 | 7     | 8 | 9 | 10 |
| All the time |   | Sometimes |   | Rarely |   | Never |   |   |    |

7. How frequently do you find yourself just getting by financially and living paycheck to paycheck?

|              |   |           |   |        |   |       |   |   |    |
|--------------|---|-----------|---|--------|---|-------|---|---|----|
| 1            | 2 | 3         | 4 | 5      | 6 | 7     | 8 | 9 | 10 |
| All the time |   | Sometimes |   | Rarely |   | Never |   |   |    |

8. How stressed do you feel about your personal finances in general?

|                     |   |             |   |            |   |                  |   |   |    |
|---------------------|---|-------------|---|------------|---|------------------|---|---|----|
| 1                   | 2 | 3           | 4 | 5          | 6 | 7                | 8 | 9 | 10 |
| Overwhelming Stress |   | High Stress |   | Low Stress |   | No Stress at All |   |   |    |

## Appendix F      Generalized Anxiety Disorder Scale (GAD-7; Spitzer et al., 2006)

| <i>Over the last 2 weeks, how often have you been bothered by the following problems?</i> | Not at all | Several days | Over half the days | Nearly every day |
|---|------------|--------------|--------------------|------------------|
| 1. Feeling nervous, anxious, or on edge   | 0          | 1            | 2                  | 3                |
| 2. Not being able to stop or control worrying   | 0          | 1            | 2                  | 3                |
| 3. Worrying too much about different things   | 0          | 1            | 2                  | 3                |
| 4. Trouble relaxing   | 0          | 1            | 2                  | 3                |
| 5. Being so restless that it's hard to sit still  | 0          | 1            | 2                  | 3                |
| 6. Becoming easily annoyed or irritable   | 0          | 1            | 2                  | 3                |
| 7. Feeling afraid as if something awful might happen                                      | 0          | 1            | 2                  | 3                |

## Appendix G Patient Health Questionnaire (PHQ-9; Kroenke, et al., 2001)

1. Over the last 2 weeks, how often have you been bothered by any of the following problems?

|  | Not at all<br>(0)        | Several<br>days (1)      | More<br>than half<br>the days<br>(2) | Nearly<br>every day<br>(3) |
|--|--------------------------|--------------------------|--------------------------------------|----------------------------|
| a. Little interest or pleasure in doing things.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             | <input type="checkbox"/>   |
| b. Feeling down, depressed, or hopeless.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             | <input type="checkbox"/>   |
| c. Trouble falling/staying asleep, sleeping too much.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             | <input type="checkbox"/>   |
| d. Feeling tired or having little energy.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             | <input type="checkbox"/>   |
| e. Poor appetite or overeating.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             | <input type="checkbox"/>   |
| f. Feeling bad about yourself, or that you are a failure, or have let yourself or your family down.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             | <input type="checkbox"/>   |
| g. Trouble concentrating on things, such as reading the newspaper or watching TV.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             | <input type="checkbox"/>   |
| h. Moving or speaking so slowly that other people could have noticed.<br>Or the opposite; being so fidgety or restless that you have been moving around more than usual. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             | <input type="checkbox"/>   |
| i. Thoughts that you would be better off dead or of hurting yourself in some way.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             | <input type="checkbox"/>   |

2. If you checked off any problem on this questionnaire so far, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

- Not difficult at all     
  Somewhat difficult     
  Very difficult     
  Extremely difficult

## Appendix H Perceived Stress Scale (PSS; Cohen et al., 1983)

**For each question choose from the following alternatives:**

**0 - never   1 - almost never   2 - sometimes   3 - fairly often   4 - very often**

- \_\_\_\_\_ 1. In the last month, how often have you been upset because of something that happened unexpectedly?
- \_\_\_\_\_ 2. In the last month, how often have you felt that you were unable to control the important things in your life?
- \_\_\_\_\_ 3. In the last month, how often have you felt nervous and stressed?
- \_\_\_\_\_ 4. In the last month, how often have you felt confident about your ability to handle your personal problems?
- \_\_\_\_\_ 5. In the last month, how often have you felt that things were going your way?
- \_\_\_\_\_ 6. In the last month, how often have you found that you could not cope with all the things that you had to do?
- \_\_\_\_\_ 7. In the last month, how often have you been able to control irritations in your life?
- \_\_\_\_\_ 8. In the last month, how often have you felt that you were on top of things?
- \_\_\_\_\_ 9. In the last month, how often have you been angered because of things that happened that were outside of your control?
- \_\_\_\_\_ 10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

## Appendix I Brief Suicide Cognitions Scale (B-SCS; Rudd & Bryan, 2021)

| B-SCS  |  |
|--|--|
| Please circle the number that most accurately represents your level of agreement with each item below: |  |

1. I am completely unworthy of love.

|   |
|---|
| 1-----2-----3-----4-----5                         |
| Strongly Disagree Disagree Neutral Agree Strongly |
| Agree   |

2. Nothing can help me solve my problems.

|   |
|---|
| 1-----2-----3-----4-----5                         |
| Strongly Disagree Disagree Neutral Agree Strongly |
| Agree   |

3. I can't cope with my problems any longer.

|   |
|---|
| 1-----2-----3-----4-----5                         |
| Strongly Disagree Disagree Neutral Agree Strongly |
| Agree   |

4. I can't imagine anyone being able to withstand this kind of pain.

|   |
|---|
| 1-----2-----3-----4-----5                         |
| Strongly Disagree Disagree Neutral Agree Strongly |
| Agree   |

5. There's nothing redeeming about me.

|   |
|---|
| 1-----2-----3-----4-----5                         |
| Strongly Disagree Disagree Neutral Agree Strongly |
| Agree   |

6. Suicide is the only way to end this pain.

|   |
|---|
| 1-----2-----3-----4-----5                         |
| Strongly Disagree Disagree Neutral Agree Strongly |
| Agree   |

## Appendix J      Clinical Outcomes Routine Evaluation- General Population Version (GP-CORE; Evans et al., 2005)

Over the last week ...

|   | Not at all                 | Only occasionally          | Sometimes                  | Often                      | Most or all the time       |
|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| 1 I have felt tense, anxious or nervous                           | <input type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| 2 I have felt I have someone to turn to for support when needed   | <input type="checkbox"/> 4 | <input type="checkbox"/> 3 | <input type="checkbox"/> 2 | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |
| 3 I have felt OK about myself                                     | <input type="checkbox"/> 4 | <input type="checkbox"/> 3 | <input type="checkbox"/> 2 | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |
| 4 I have felt able to cope when things go wrong                   | <input type="checkbox"/> 4 | <input type="checkbox"/> 3 | <input type="checkbox"/> 2 | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |
| 5 I have been troubled by aches, pains or other physical problems | <input type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| 6 I have been happy with the things I have done                   | <input type="checkbox"/> 4 | <input type="checkbox"/> 3 | <input type="checkbox"/> 2 | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |
| 7 I have had difficulty getting to sleep or staying asleep        | <input type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| 8 I have felt warmth or affection for someone                     | <input type="checkbox"/> 4 | <input type="checkbox"/> 3 | <input type="checkbox"/> 2 | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |
| 9 I have been able to do most things I needed to                  | <input type="checkbox"/> 4 | <input type="checkbox"/> 3 | <input type="checkbox"/> 2 | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |
| 10 I have felt criticised by other people                         | <input type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| 11 I have felt unhappy  | <input type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| 12 I have been irritable when with other people                   | <input type="checkbox"/> 0 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| 13 I have felt optimistic about my future                         | <input type="checkbox"/> 4 | <input type="checkbox"/> 3 | <input type="checkbox"/> 2 | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |
| 14 I have achieved the things I wanted to                         | <input type="checkbox"/> 4 | <input type="checkbox"/> 3 | <input type="checkbox"/> 2 | <input type="checkbox"/> 1 | <input type="checkbox"/> 0 |

**THANK YOU FOR YOUR TIME IN COMPLETING THIS QUESTIONNAIRE**

## Appendix K Fears of Compassion Scale (FCS; Gilbert et al., 2011)

### SCALE

Please use this scale to rate the extent that you agree with each statement

Don't agree at 0 1 2 3 4 Completely  
all agree  
Somewhat  
agree

#### Scale 1: Expressing compassion for others

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 1. People will take advantage of me if they see me as too compassionate  | 0 | 1 | 2 | 3 | 4 |
| 2. Being compassionate towards people who have done bad things is letting them off the hook                      | 0 | 1 | 2 | 3 | 4 |
| 3. There are some people in life who don't deserve compassion  | 0 | 1 | 2 | 3 | 4 |
| 4. I fear that being too compassionate makes people an easy target   | 0 | 1 | 2 | 3 | 4 |
| 5. People will take advantage of you if you are too forgiving and compassionate                                  | 0 | 1 | 2 | 3 | 4 |
| 6. I worry that if I am compassionate, vulnerable people can be drawn to me and drain my emotional resources     | 0 | 1 | 2 | 3 | 4 |
| 7. People need to help themselves rather than waiting for others to help them                                    | 0 | 1 | 2 | 3 | 4 |
| 8. I fear that if I am compassionate, some people will become too dependent upon me                              | 0 | 1 | 2 | 3 | 4 |
| 9. Being too compassionate makes people soft and easy to take advantage of                                       | 0 | 1 | 2 | 3 | 4 |
| 10. For some people, I think discipline and proper punishments are more helpful than being compassionate to them | 0 | 1 | 2 | 3 | 4 |

## Scale 2: Responding to the expression of compassion from others

- |     |  |   |   |   |   |   |
|-----|--|---|---|---|---|---|
| 1.  | Wanting others to be kind to oneself is a weakness   | 0 | 1 | 2 | 3 | 4 |
| 2.  | I fear that when I need people to be kind and understanding they won't be  | 0 | 1 | 2 | 3 | 4 |
| 3.  | I'm fearful of becoming dependent on the care from others because they might not always be available or willing to give it | 0 | 1 | 2 | 3 | 4 |
| 4.  | I often wonder whether displays of warmth and kindness from others are genuine   | 0 | 1 | 2 | 3 | 4 |
| 5.  | Feelings of kindness from others are somehow frightening   | 0 | 1 | 2 | 3 | 4 |
| 6.  | When people are kind and compassionate towards me I feel anxious or embarrassed  | 0 | 1 | 2 | 3 | 4 |
| 7.  | If people are friendly and kind I worry they will find out something bad about me that will change their mind              | 0 | 1 | 2 | 3 | 4 |
| 8.  | I worry that people are only kind and compassionate if they want something from me   | 0 | 1 | 2 | 3 | 4 |
| 9.  | When people are kind and compassionate towards me I feel empty and sad   | 0 | 1 | 2 | 3 | 4 |
| 10. | If people are kind I feel they are getting too close   | 0 | 1 | 2 | 3 | 4 |
| 11. | Even though other people are kind to me, I have rarely felt warmth from my relationships with others                       | 0 | 1 | 2 | 3 | 4 |
| 12. | I try to keep my distance from others even if I know they are kind   | 0 | 1 | 2 | 3 | 4 |
| 13. | If I think someone is being kind and caring towards me, I 'put up a barrier'   | 0 | 1 | 2 | 3 | 4 |



### Scale 3: Expressing kindness and compassion towards yourself

- |     |  |   |   |   |   |   |
|-----|--|---|---|---|---|---|
| 1.  | I feel that I don't deserve to be kind and forgiving to myself   | 0 | 1 | 2 | 3 | 4 |
| 2.  | If I really think about being kind and gentle with myself it makes me sad  | 0 | 1 | 2 | 3 | 4 |
| 3.  | Getting on in life is about being tough rather than compassionate  | 0 | 1 | 2 | 3 | 4 |
| 4.  | I would rather not know what being 'kind and compassionate to myself' feels like                                 | 0 | 1 | 2 | 3 | 4 |
| 5.  | When I try and feel kind and warm to myself I just feel kind of empty  | 0 | 1 | 2 | 3 | 4 |
| 6.  | I fear that if I start to feel compassion and warmth for myself, I will feel overcome with a sense of loss/grief | 0 | 1 | 2 | 3 | 4 |
| 7.  | I fear that if I become kinder and less self-critical to myself then my standards will drop                      | 0 | 1 | 2 | 3 | 4 |
| 8.  | I fear that if I am more self compassionate I will become a weak person  | 0 | 1 | 2 | 3 | 4 |
| 9.  | I have never felt compassion for myself, so I would not know where to begin to develop these feelings            | 0 | 1 | 2 | 3 | 4 |
| 10. | I worry that if I start to develop compassion for myself I will become dependent on it                           | 0 | 1 | 2 | 3 | 4 |
| 11. | I fear that if I become too compassionate to myself I will lose my self-criticism and my flaws will show         | 0 | 1 | 2 | 3 | 4 |
| 12. | I fear that if I develop compassion for myself, I will become someone I do not want to be                        | 0 | 1 | 2 | 3 | 4 |
| 13. | I fear that if I become too compassionate to myself others will reject me  | 0 | 1 | 2 | 3 | 4 |
| 14. | I find it easier to be critical towards myself rather than compassionate   | 0 | 1 | 2 | 3 | 4 |
| 15. | I fear that if I am too compassionate towards myself, bad things will happen                                     | 0 | 1 | 2 | 3 | 4 |

## Appendix L      Forms of self-criticising/attacking & self-reassuring scale (FSCRS; Gilbert et al., 2004)

Please use the scale below.

|                                     | Not at all<br>like me<br>0   | A little bit<br>like me<br>1 | Moderately<br>like me<br>2 | Quite a bit<br>like me<br>3 | Extremely<br>like me<br>4 |
|-------------------------------------|--|------------------------------|----------------------------|-----------------------------|---------------------------|
| <b>When things go wrong for me:</b> |  |                              |                            |                             |                           |
| 1.                                  | I am easily disappointed with myself.                                    |                              |                            |                             | 0 1 2 3 4                 |
| 2.                                  | There is a part of me that puts me down.                                 |                              |                            |                             | 0 1 2 3 4                 |
| 3.                                  | I am able to remind myself of positive things about myself.              |                              |                            |                             | 0 1 2 3 4                 |
| 4.                                  | I find it difficult to control my anger and frustration at myself.       |                              |                            |                             | 0 1 2 3 4                 |
| 5.                                  | I find it easy to forgive myself.  |                              |                            |                             | 0 1 2 3 4                 |
| 6.                                  | There is a part of me that feels I am not good enough.                   |                              |                            |                             | 0 1 2 3 4                 |
| 7.                                  | I feel beaten down by my own self-critical thoughts.                     |                              |                            |                             | 0 1 2 3 4                 |
| 8.                                  | I still like being me.   |                              |                            |                             | 0 1 2 3 4                 |
| 9.                                  | I have become so angry with myself that I want to hurt or injure myself. |                              |                            |                             | 0 1 2 3 4                 |
| 10.                                 | I have a sense of disgust with myself.                                   |                              |                            |                             | 0 1 2 3 4                 |
| 11.                                 | I can still feel lovable and acceptable.                                 |                              |                            |                             | 0 1 2 3 4                 |
| 12.                                 | I stop caring about myself.  |                              |                            |                             | 0 1 2 3 4                 |
| 13.                                 | I find it easy to like myself.   |                              |                            |                             | 0 1 2 3 4                 |
| 14.                                 | I remember and dwell on my failings.                                     |                              |                            |                             | 0 1 2 3 4                 |
| 15.                                 | I call myself names.   |                              |                            |                             | 0 1 2 3 4                 |
| 16.                                 | I am gentle and supportive with myself.                                  |                              |                            |                             | 0 1 2 3 4                 |
| 17.                                 | I can't accept failures and setbacks without feeling inadequate.         |                              |                            |                             | 0 1 2 3 4                 |
| 18.                                 | I think I deserve my self-criticism.                                     |                              |                            |                             | 0 1 2 3 4                 |
| 19.                                 | I am able to care and look after myself.                                 |                              |                            |                             | 0 1 2 3 4                 |
| 20.                                 | There is a part of me that wants to get rid of the bits I don't like.    |                              |                            |                             | 0 1 2 3 4                 |
| 21.                                 | I encourage myself for the future.                                       |                              |                            |                             | 0 1 2 3 4                 |
| 22.                                 | I do not like being me.  |                              |                            |                             | 0 1 2 3 4                 |

## Appendix M Participant Information Sheet

### Participant Information Sheet

**Study Title:** Does compassion mediate the relationship between financial hardship and mental health?

**Researcher:** Samantha Ashworth (Trainee Clinical Psychologist)

**University Email:** [S.R.Ashworth@soton.ac.uk](mailto:S.R.Ashworth@soton.ac.uk)

**ERGO number:** 74697

You are being invited to take part in the above research study. To help you decide whether you would like to take part or not, it is important that you understand why the research is being done and what it will involve. Please read the information below carefully and ask questions if anything is not clear or you would like more information before you decide to take part in this research. You may like to discuss it with others but it is up to you to decide whether or not to take part. If you are happy to participate you will be asked to complete a consent form.

#### **What is the research about?**

My name is Samantha Ashworth and I am a Trainee Clinical Psychologist at the University of Southampton in the United Kingdom. I am conducting this study as part of the academic qualification, Doctorate in Clinical Psychology. My supervisors for this study are Dr Thomas Richardson (Associate Professor of Clinical Psychology) and Dr Nick Maguire (Associate Professor in Clinical Psychology).

We know that there are currently many global issues which may be making people's financial situations more difficult or more stressful. We are doing this study to better understand the impact of financial hardship on mental health, and specifically whether our compassion changes this impact.

This study was approved by the Faculty Research Ethics Committee (FREC) at the University of Southampton (Ethics/ERGO Number: 74697).

#### **Why have I been asked to participate?**

We are inviting anyone aged 18 and over to take part, no matter where you live or your current financial situation or current mental health experiences. We would like to hear from people facing different situations and with different mental health experiences so that we can get a better understanding of the role of compassion in the relationship between financial hardship and mental health. I am hoping to recruit at least 200 participants for this study.

#### **What will happen to me if I take part?**

This study involves completing a questionnaire which should take approximately 25-35 minutes of your time. You will be invited back to complete the second questionnaire in 3 months and the final questionnaire in 6 months. At both of these timepoints, a reminder email will be sent one week later. The second and third questionnaire should take approximately 20-30 minutes of your time.

If you decide to take part, you will access this study online through a link or QR code provided on recruitment materials. Before starting the questionnaire, you will need to complete a consent form. You have the option to either complete the questionnaires online or to request a paper version of the questionnaires if you would prefer. If you would prefer

the paper option, you will need to email Samantha at [S.R.Ashworth@soton.ac.uk](mailto:S.R.Ashworth@soton.ac.uk) and you then be asked to provide a postal address to which they consent that the questionnaires be sent by post. This option is available to participants living in the UK only. Participants who choose to complete these questionnaires online will be directed to the online questionnaire after completing the consent form.

As part of this study, you will be asked to provide an email address which would be used to contact you to invite you to complete the second and third questionnaire, at 3 months and 6 months after the initial questionnaire. This email address will also be used to link your three completed questionnaires. At 3 months and 6 months after the initial questionnaire completion, you will be sent email inviting you to complete the survey. A reminder email will be sent one week later.

After each questionnaire, you will be directed to a debriefing statement. If a paper version is requested, this debriefing statement will be included in what is sent to a participant by post. This debriefing statement will include the details of several relevant information and support services for both financial hardship and mental health difficulties.

After each questionnaire you will be invited to take part in a prize draw to win one of several £25 Amazon gift vouchers, to thank you for your time and participation. You will be asked to provide an email address and the prize draw will happen after the closure of data collection at each time point. You will be emailed to be told if you have won a gift voucher.

This flowchart shows the timeline of taking part in this study:



#### **Are there any benefits in my taking part?**

If you decide to take part in this study, you will be invited to be entered into a draw to win a £25 Amazon voucher, to thank participants for their time and taking part. Your participation will contribute to the existing research around the impact of financial hardship on mental health and may help improve the current understanding of the types of support which may be helpful. This is currently an important area of interest due to the increasing cost of living we are experiencing across the world. If you are a University of Southampton student, you will also be awarded with 5 research credits for each part of the study.

#### **Are there any risks involved?**

It is expected that taking part in this study will not involve any risks or cause you any psychological discomfort and/or distress. However, should you feel distressed, you can leave the online questionnaire at any time and can contact the following resources for support:

#### Mindfulness exercises:

These may help reduce distress and are available internationally: <https://www.youtube.com/playlist?list=PLFbeQITqQPGTLAmNgKs0srX9Vau7mctFf>

University of Southampton Counselling Service:

If you are a student at the University of Southampton you can access counselling via the Student Hub.

Telephone: 02380599599

Email: [studenthub@soton.ac.uk](mailto:studenthub@soton.ac.uk)

Postal address: Building 37, University of Southampton, University Road, Highfield, Southampton, SO17 1BJ

NHS mental health services (for participants in the UK):

Find information, advice, and local services on the NHS website ([Mental health - NHS \(www.nhs.uk\)](https://www.nhs.uk)). You can also get advice from the NHS 111 phone service.

Samaritans (UK and Ireland):

Available 24 hours a day to provide confidential emotional support for people who are experiencing feelings of distress, despair or suicidal thoughts.

[www.samaritans.org](http://www.samaritans.org)

116 123 (free to call from within the UK and Ireland), 24 hours a day

Email: [jo@samaritans.org](mailto:jo@samaritans.org)

Mind (UK only):

Mind offers advice, support and information to people experiencing a mental health difficulty and their family and friends. Mind also has a network of local associations in England and Wales to which people can turn for help and assistance.

Lines are open Monday to Friday 9am to 6pm (except bank holidays).

[www.mind.org.uk](http://www.mind.org.uk)

InfoLine: 0300 123 3393 to call, or text 86463

Email: [info@mind.org.uk](mailto:info@mind.org.uk)

For participants outside of the UK please visit: <https://unitedgmh.org/mental-health-support> for a list of international helpline numbers or contact your local health facility.

Resources in the US: <https://www.dbsalliance.org/> or National Alliance on Mental Illness (NAMI) hotline 1-800-950-NAMI (6264) or [info@nami.org](mailto:info@nami.org)

Resources in Ireland: <https://www.mentalhealthireland.ie/get-support/>

**What data will be collected?**

You will be asked to provide some demographic information, such as ethnicity, gender and information about employment. You will be asked questions about your financial situation, any worry it causes you, questions about the kindness you may show yourself and others, and questions about your mental health (such as mood and anxiety).

Some of the questions contain textboxes where you will be asked to type in your own answers. You will be asked to provide an email address so that you can take part in the second and third parts of the study and so that you can be entered into the draw to win one of several £25 Amazon vouchers.

**Will my participation be confidential?**

Your participation and the information we collect about you during the course of the research will be kept strictly confidential. All data will be kept on a secure part of the server

at the University of Southampton and only accessible by the research team (Samantha and her research supervisors).

Only members of the research team and responsible members of the University of Southampton may be given access to data about you for monitoring purposes and/or to carry out an audit of the study to ensure that the research is complying with applicable regulations. Individuals from regulatory authorities (people who check that we are carrying out the study correctly) may require access to your data. All of these people have a duty to keep your information, as a research participant, strictly confidential.

In addition, all data will be pooled and compiled into data summaries. Your email address will be removed from your other responses and then deleted at the end of the study. Only the researcher and their supervisors will have access to your information.

#### **Do I have to take part?**

No, it is entirely up to you to decide whether or not to take part. If you decide you want to take part you can follow the link or QR code to the online consent form that you will need to complete before completing the questionnaire.

#### **What happens if I change my mind?**

You have the right to change your mind and withdraw at any time without giving a reason and without your participant rights being affected. Data analysis will begin two weeks after you complete a questionnaire. If you choose to withdraw after these two weeks, you will not be invited to complete any other questionnaires but your data will still be used. In this case, we will keep the information about you that we have already obtained for the purposes of achieving the objectives of the study only.

#### **What will happen to the results of the research?**

Your personal details will remain strictly confidential. Research findings made available in any reports or publications will not include information that can directly identify you. Following completion of this study, the confidential data will no longer be linked to any email addresses and this dataset may be used in further research studies on money and mental health. This data will be stored on a secure university server for 10 years, in line with the University of Southampton data storage policy.

The data will be analysed and the results will be written up as part of the researcher's doctorate thesis and submitted to the University of Southampton in partial completion of a Doctorate in Clinical Psychology. This may then be published in a journal or presented at conferences. Only group trends (not individual responses) will be included in any published work or presentations.

#### **Where can I get more information?**

Should you have any questions or wish to discuss anything further, please get in touch with the research team via the contact details below:

Researcher:  
Samantha Ashworth  
[S.R.Ashworth@soton.ac.uk](mailto:S.R.Ashworth@soton.ac.uk)

Research Supervisors:  
Dr Thomas Richardson  
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### **What happens if there is a problem?**

If you have a concern about any aspect of this study, you should speak to the researchers who will do their best to answer your questions.

If you remain unhappy or have a complaint about any aspect of this study, please contact the University of Southampton Research Integrity and Governance Manager (023 8059 5058, [rgoinfo@soton.ac.uk](mailto:rgoinfo@soton.ac.uk)).

### **Data Protection Privacy Notice**

The University of Southampton conducts research to the highest standards of research integrity. As a publicly-funded organisation, the University has to ensure that it is in the public interest when we use personally-identifiable information about people who have agreed to take part in research. This means that when you agree to take part in a research study, we will use information about you in the ways needed, and for the purposes specified, to conduct and complete the research project. Under data protection law, 'Personal data' means any information that relates to and is capable of identifying a living individual. The University's data protection policy governing the use of personal data by the University can be found on its website (<https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page>).

This Participant Information Sheet tells you what data will be collected for this project and whether this includes any personal data. Please ask the research team if you have any questions or are unclear what data is being collected about you.

Our privacy notice for research participants provides more information on how the University of Southampton collects and uses your personal data when you take part in one of our research projects and can be found at <http://www.southampton.ac.uk/assets/sharepoint/intranet/Is/Public/Research%20and%20Integrity%20Privacy%20Notice/Privacy%20Notice%20for%20Research%20Participants.pdf>

Any personal data we collect in this study will be used only for the purposes of carrying out our research and will be handled according to the University's policies in line with data protection law. If any personal data is used from which you can be identified directly, it will not be disclosed to anyone else without your consent unless the University of Southampton is required by law to disclose it.

Data protection law requires us to have a valid legal reason ('lawful basis') to process and use your Personal data. The lawful basis for processing personal information in this research study is for the performance of a task carried out in the public interest. Personal data collected for research will not be used for any other purpose.

For the purposes of data protection law, the University of Southampton is the 'Data Controller' for this study, which means that we are responsible for looking after your information and using it properly. The University of Southampton will keep identifiable information about you for 10 years after the study has finished after which time any link between you and your information will be removed.

To safeguard your rights, we will use the minimum personal data necessary to achieve our research study objectives. Your data protection rights – such as to access, change, or transfer such information – may be limited, however, in order for the research output to be reliable and accurate. The University will not do anything with your personal data that you would not reasonably expect.

If you have any questions about how your personal data is used, or wish to exercise any of your rights, please consult the University's data protection webpage (<https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page>) where you can make a request using our online form. If you need further assistance, please contact the University's Data Protection Officer ([data.protection@soton.ac.uk](mailto:data.protection@soton.ac.uk)).

**Thank you very much for taking the time to read this information sheet and for considering to take part in this study.**



## Appendix N Consent form

### CONSENT FORM

**Study title:** Does compassion mediate the relationship between financial hardship and mental health?

**Researcher name:** Samantha Ashworth (Trainee Clinical Psychologist)

**ERGO number:** 74697

*Please tick (check) this box to indicate that you agree with the statement(s) and consent to taking part in this survey:*

|  |  |
|--|--|
| I have read and understood the information sheet (01/08/22/Version no.1) and have had the opportunity to ask questions about the study.  |  |
| I agree to take part in this research project and agree for my data to be used for the purpose of this study.  |  |
| I understand my participation is voluntary and I may withdraw within 2 weeks after completing the survey at each timepoint for any reason without my participation rights being affected.                          |  |
| I understand that should I withdraw from the study then the information collected about me up to this point may still be used for the purposes of achieving the objectives of the study only.                      |  |
| I understand that if I withdraw from the study that it may not be possible to remove the data once my personal information is no longer linked to the data.  |  |
| I understand that special category information will be collected about me to achieve the objectives of the study, this includes: information on ethnicity; sexual orientation; gender identity; religious beliefs. |  |
| I understand that I will not be directly identified in any reports of the research.  |  |

**Before starting the survey, participants will be shown this statement and be required to tick the box:**

Please tick (check) this box to indicate that you consent to taking part in this survey.

## Appendix O Debriefing Form



**Does compassion mediate the relationship between financial hardship and mental health?**

**Debriefing Statement** (Version 1.0, 05/08/22)

**ERGO ID: 74697**

The aim of this research was to better understand whether compassion affects the relationship between financial hardship and mental health. It is expected that compassion is likely to have a positive impact on this relationship. Your data will help improve our understanding of the role of compassion in the relationship between financial hardship and mental health. Once again results of this study will not include your name or any other identifying characteristics. The research did not use deception. Once this study is completed, you may have a copy of the summary of findings if you wish.

If you have any further questions please contact Samantha Ashworth at [S.R.Ashworth@soton.ac.uk](mailto:S.R.Ashworth@soton.ac.uk)

**Thank you for your participation in this research.**

If your participation in the study has caused you any discomfort or distress or you would like to access any further support please see below a list of contact details for services which may be able to offer support or aftercare.

Mindfulness exercises:

These may help reduce distress and are available internationally:  
<https://www.youtube.com/playlist?list=PLFbeQITqQPGLAmNgKs0srX9Vau7mctFf>

NHS mental health services (for participants in the UK):

Find information, advice, and local services on the NHS website ([Mental health - NHS](#) ([www.nhs.uk](http://www.nhs.uk))). You can also get advice from the NHS 111 phone service.

Samaritans (UK and Ireland):

Available 24 hours a day to provide confidential emotional support for people who are experiencing feelings of distress, despair or suicidal thoughts.

[www.samaritans.org](http://www.samaritans.org)

116 123 (free to call from within the UK and Ireland), 24 hours a day

Email: [jo@samaritans.org](mailto:jo@samaritans.org)

Mind (UK only):

Mind offers advice, support and information to people experiencing a mental health difficulty and their family and friends. Mind also has a network of local associations in England and Wales to which people can turn for help and assistance.

Lines are open Monday to Friday 9am to 6pm (except bank holidays).

[www.mind.org.uk](http://www.mind.org.uk)

InfoLine: 0300 123 3393 to call, or text 86463

Email: [info@mind.org.uk](mailto:info@mind.org.uk)

For participants outside of the UK please visit: <https://unitedgmh.org/mental-health-support> for a list of international helpline numbers or contact your local health facility.

Resources in the US: <https://www.dbsalliance.org/> or National Alliance on Mental Illness (NAMI) hotline 1-800-950-NAMI (6264) or [info@nami.org](mailto:info@nami.org)

Resources in Ireland: <https://www.mentalhealthireland.ie/get-support/>

There is information about Bipolar disorder on this website (though some resources are only available to those in the UK):

[Bipolar UK](#)

There is information about the link between money and mental health problems here:

[Mental health and money : Mental Health & Money Advice \(mentalhealthandmoneyadvice.org\)](#)

[www.moneyandmentalhealth.org](http://www.moneyandmentalhealth.org)

[Free Mental Health and Debt booklet - MSE \(moneysavingexpert.com\)](#)

There is also information about tools to help with impulsive spending here:

[Shopper-stopper-alternatives.pdf \(moneyandmentalhealth.org\)](#)

There are tips on coping with problem gambling here:

<http://www.rcpsych.ac.uk/healthadvice/problemsdisorders/problemgambling.aspx>

<https://www.begambleaware.org/stay-in-control/how-to-self-exclude/>

There is information and support to help you get out of debt from:

Step Change Debt Charity (UK) – [https://startbychange.co.uk/?gclid=EAIaIQobChMI-4fHv-6I-QIV0uN3Ch1FYAkAEAAAYASAAEgl6AvD\\_BwE](https://startbychange.co.uk/?gclid=EAIaIQobChMI-4fHv-6I-QIV0uN3Ch1FYAkAEAAAYASAAEgl6AvD_BwE)

Citizens Advice (UK) – <https://www.citizensadvice.org.uk/>

Contact number (UK) – 0800 240 4420

Christians Against Poverty – <https://capuk.org/> (You do not have to be Christian to access this support).

UK contact number: 0800 328 0006

**Thank you again for your participation in this research.**

If you have questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you may contact the University of Southampton Head of Research Integrity and Governance (023 8059 5058, [rgoinfo@soton.ac.uk](mailto:rgoinfo@soton.ac.uk)).

# ARE YOU WORRIED ABOUT PAYING YOUR BILLS OR BEING IN DEBT?



TAKE PART IN A PSYCHOLOGY STUDY  
ABOUT MONEY & MENTAL HEALTH

ERGO ID: 74697



## Aim

We are investigating whether compassion changes the impact of money worries on our mental health.

Stand a chance to win a £25 Amazon voucher

## What does it involve?

Completing an online survey now, in 3 months & in 6 months. This survey should take about 20 minutes.



## Who can take part?

Anyone aged 18 & over, regardless of your mental health or financial situation

For more details please use this URL or QR code:

<https://tinyurl.com/3puzjy74>

If you have any questions please email Samantha at

[S.R.Ashworth@soton.ac.uk](mailto:S.R.Ashworth@soton.ac.uk)



## Appendix Q Ethical approval – Initial

Submission ID: 74697

Submission Title: Does compassion mediate the relationship between financial hardship and mental health?

Submitter Name: Samantha Ashworth

The Research Integrity and Governance team have reviewed and approved your submission.

You can begin your research unless you are still awaiting specific Health and Safety approval (e.g. for a Genetic or Biological Materials Risk Assessment) or external review.

The following comments have been made:

- Thank you for this information. It is understood that this research has developed with PPI involvement, and involves collecting sensitive personal data via online survey.

In order to avoid any delay occasioned by a revision request I am pleased to approve the study on the following condition:

### Condition 1:

We assume you have a Data Management Plan outlining compliance with GDPR (although not submitted as an attachment) . It is noted that potential participants can express an interest in taking part by sending you a request for a paper PIS and CF. This means you have their contact details but there is no guarantee they will actually participate (they have not yet signed a consent form). Please ensure you delete all personal contacts that are given solely for the purpose of sending information, and not for linking the survey data. This should be done as soon as it is possible to do so. **Please update your data management plan and send it direct to [rgoinfo@soton.ac.uk](mailto:rgoinfo@soton.ac.uk) so we can attach it to your ERGO record.**

## **Appendix R      Ethical Approval – Amendment**

Submission ID: 74697.A2

Submission Title: Does compassion mediate the relationship between financial hardship and mental health? (Amendment 2)

Submitter Name: Samantha Ashworth

The Research Integrity and Governance team have reviewed and approved your submission.

You can begin your research unless you are still awaiting specific Health and Safety approval (e.g. for a Genetic or Biological Materials Risk Assessment) or external review.

The following comments have been made:

- Thank you for this information concerning an amendment that removes the third data collection point from the protocol. We are pleased to approve the amendment and remind you that it is still our expectation that all participants will receive the debrief at the end of their participation.

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