# MENTAL HEALTH AND FINANCIAL DECISIONS: EMOTIONAL STATE AND FINANCIAL WELL-BEING

## Technical Report

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THINK FORWARD INITIATIVE

# MENTAL HEALTH AND FINANCIAL DECISIONS: EMOTIONAL STATE AND FINANCIAL WELL-BEING *

**TECHNICAL REPORT**

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**Abstract**

The rise in mental health problems, such as anxiety and depression, are anticipated to have profound long-term effects on people's lives. This motivates the need to better understand the relationship between mental health and financial well-being of households. We use two large cross-country datasets and document several facts. First, we establish that mental distress has a large and significant relation to financial distress of the household, measured both objectively and subjectively. Second, we find that this relationship is independent of age and the income level of the household, as well as time and country-fixed effects. Third, we reveal that traits related to self-efficacy may explain a large part of the relation between mental health and financial distress, while risk aversion and memory do not seem to have any effect. Finally, we find evidence that people who suffer from mental health issues are more likely to say they perform worse and are more likely to delegate financial responsibilities within the household.

***Keywords*:** Financial distress, Debt, Savings, Mental health, Non-cognitive abilities, Self-efficacy, Financial decisions

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# 1. Introduction

Even before the surge due to coronavirus pandemic, mental health has been recognized as one of the major challenges facing individuals and society. The World Health Organization has estimated that every person will have mental health problems at least once in their lifetime, while the economic and social costs of mental disorders were assessed to be approximately US$2.5 trillion and growing (World Bank Group, and World Health Organization, 2016). Furthermore, there is evidence that younger generations (young adolescents and individuals born after 1995) are more likely to suffer from depression and other mental health disorders than the elder cohorts (Mojtabai et al., 2016), while in the USA survey of the Pew Research Centre in 2018, 70 percent of the respondents under the age of 20 reported anxiety and depression to be a major concern among peers[3].

In the economic literature, mental health has been mostly studied in terms of the work productivity and health care costs, similarly to physical health (Bryan et al. 2020; Layard et al., 2014; Layard 2017; Luo et al., 2010). There is less understanding of the relation between mental health and households' financial decisions. At the same time, numerous studies have established that households' decision-making can be impeded by cognitive limitations, lack of skills or behavioural biases[4]. It also has been argued that mental health issues may amplify these effects (Borgan and Fertig, 2013, 2017). Two studies are most related to our research. Cocco et al. (2019) show that emotional well-being is linked to financial distress. Bogan and Fertig (2017) investigate whether differences in mental health status may help to understand divergence in retirement saving decisions. Their results show that mental health, as measured by psychological distress, is significantly related to retirement saving behaviour.

In this paper, we use two large representative household surveys to document the relation between mental health and financial well-being of the household, above and beyond labor income and health-care costs. First, we corroborate and extend existing research about the relation between mental health issues and financial well-being of households. We provide evidence from a large European dataset and UK survey, which show a strong link between mental health and both subjective as well as objective measures of financial distress. We establish that the relation between mental health and financial well-being is robust controlling for a large set of observable characteristics, the unobserved variation at the individual level as well as country and time fixed effects.

Among various manifestations of mental health problems, depression, lack of interest and lack of sleep appear to have the strongest link with financial distress. Importantly, we document that both the relation between mental health and financial distress and its magnitude appear to be independent of income level.

One of the main issues in studying the link between mental health and financial distress is the direction of causality. While arguing causality, Taylor et al. (2011) describe the effect of financial distress on mental health. Cocco et al. (2019) provide evidence that emotional conditions are a determinant of future financial situation, even controlling for past financial

[3] The Economist report from 27.02.2019 "Generation Z is stressed, depressed and exam obsessed" summarizes the relevant research.
[4] See Lusard and Mitchell (2014) for literature review; Gaibax et al (2017)

situation and expectations of the households. They also suggest the existence of a "vicious circle" – the pattern of mental well-being affecting financial situation and in turn, financial distress impacting mental health. In our paper, we follow Borgan and Fertig (2017) as well as Cocco et al. (2019), and use the lagged measure of mental health of the financial respondent as well as the partner in case of a couple's household. We find that mental health issues observed in the previous year is a significant determinant of financial distress in the following year.

Second, we join the discussion about the channels through which mental health may affect the financial situation of a household. One hypothesis is that mental health influences economic preferences. Li et al. (2019), Bayer et al. (2019) and, earlier, Halek and Eisenhauer (2001) suggest that emotional well-being may influence financial decision through the effect it has on economic preferences, such as risk preferences.

Another hypothesis stems from the seminal work linking psychology and economics by Agarwal et al. (2019). They provide a theoretical framework which suggests that people may find it difficult to make plans under stress due to cognitive limitations. In empirical research, it has indeed been shown that lower cognitive abilities, particularly in memory, adversely influence financial decision-making (Agarwal et al., 2009; Christelis et al., 2010; Smith et al., 2010). In the related strand of literature, non-cognitive abilities have been shown to have strong effects on financial decisions (Strömbäck et al., 2017). In particular, competences related to self-efficacy can help to moderate the negative effect of mental health. Self-efficacy influences people's beliefs about their ability to act and the benefit of acting. Kuhnen and Melzer (2018) link self-efficacy and financial distress, suggesting that people with low self-efficacy are less likely to take precautionary actions to avoid financial distress.

In this paper, we consider whether cognitive and non-cognitive abilities, particularly memory and self-efficacy, could be a link in the association of mental health and financial distress. We find that while cognitive abilities (memory) and risk aversion are important determinants of financial distress, they do not appear to capture the relation between mental health and financial well-being. On the other hand, a large part of the relation between mental health and financial distress can be explained by individuals' ability to solve problems, which is an ability related to self-efficacy.

We further add to this strand of literature by studying whether mental distress may affect a households' financial situation through individuals' capability to perform tasks. We make use of two questions from the UK survey:

1) "During the past 4 weeks, how much of the time did **you do your work or other regular daily activities less carefully than usual as a result of any emotional problems,** such as feeling depressed or anxious?"
2) "During the past 4 weeks, how much of the time have **you accomplished less than you would like as a result of any emotional problems** (such as feeling depressed or anxious)?"

The unique feature of this data is the implied causal relation between mental health and one's ability to accomplish tasks (carefully). We build on this to further study whether this may be the link between mental health and financial distress of the household.

An important part of this discussion concerns within-household decision-making, mental fitness and the delegation of financial responsibilities. Mazzonna and Peracchi (2018) provide arguments that if people are aware of their cognitive challenges, they are likely to appoint someone such as a spouse or financial advisor for their financial decisions to eliminate possible financial loss. Goldfayn-Frank (2016) underscores the role of cognitive as well as non-cognitive abilities in determining the financial

decision-maker within a household. Earlier, Hsu and Willis (2013) found that, as the financial decision maker's cognition declines, the management of finances is likely to be handed over to her cognitively healthy partner.

In the present study, we document that although the mental health of both partners in the household matters significantly in terms of financial outcomes, the mental fitness of the financial decision-maker matters more. However, we do not find significant change in the financial situation of the household if financial responsibilities have been transferred to a spouse. Given that these results hold while controlling for a large set of observable characteristics such as income, labour force status, physical health and health care expenses, it suggests that other forms of delegation or financial management could be helpful in alleviating financial distress of affected households.

The rest of the report is organized as follows. First, we discuss the data which we use for the analysis, including a detailed description of the main variables of interests, as well as the possibilities and the limitations of the analysis. Then, we present the main results. We conclude with the discussion, including possible policy recommendations and directions for further research.

# 2. Data and analytical framework

What is mental health? It is defined as "a state of wellbeing in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (WHO report, 2019). Several aspects of mental health have been linked to economic performance:

- Physical aspects of mental health: sleep deprivation, fatigue, lack of concentration;
- Emotional exhaustion: being on edge or depressed, feeling down or worn out;
- Social functioning: feeling lonely or left out.

To answer our research questions, we use several datasets. The first evidence comes from the Survey of Health, Aging and Retirement in Europe (SHARE)[5]. SHARE is a longitudinal, cross-national European survey that includes micro data on health, socioeconomic status and social- and family networks of a representative sample of individuals aged 50 and above, as well as their spouse, in several European countries. Interviews are conducted approximately every two years. Questions are asked in the according native language but follow a generic questionnaire such that they are comparable across countries. Data collection began in 2004, when for the first wave individuals in 12 countries were interviewed. Data for the newest, seventh wave were collected in 2017 and contain information about all 28 European countries.[6]

In the regular waves of SHARE, all respondents were asked if they "find it difficult to make ends meet" at the end of the month, whether they had delayed payments of their most essential bills (housing costs), as well as records of financial liabilities.

We make use of the first measure to identify households who experience financial distress. We also identify households who are in financial disarray, combining the information about falling behind schedule for rent and mortgage/loans payments during the last 12 months.

In order to investigate common patterns across households as well as the intra-household dynamics, we consider two settings: one with only one respondent per household, and another one with both partners of the household. The final sample size is determined by the availability of information on individuals' mental health measurements and household's financial distress.

SHARE provides measures of cognitive abilities by standard memory tests. A ten words list is asked to be memorized and immediately recalled. It is also asked to be recalled after a time delay. In line with the standard methodology, we use the total number of words recalled in the two tests as a proxy of the respondent's memory capacity.

**Table 1** in the Appendix shows the summary statistics of the SHARE dataset. While the sample size varies depending on the variable's availability across the waves, in the least restrictive setting,

[5] See Axel Börsch-Supan (2017a), Axel Börsch-Supan (2017b), Axel Börsch-Supan (2017c), Axel Börsch-Supan (2017d), Axel Börsch-Supan (2017e), Axel Börsch-Supan (2017f), Axel Börsch-Supan (2017g).

[6] The third and seventh waves of SHARE, also known as SHARELIFE, are different from the regular panel waves, as they focus on retrospective questions about the respondents' childhood and their employment, fertility, marital as well as health histories.

the analysis is based on a sample of almost 134,000 observations.

While the SHARE dataset encompasses the older population, we expand our analysis using the British Household Panel Survey (BHPS) and Understanding Society (UKHLS) data, which allow to conduct a panel analysis of the representative UK population.

Starting from 1991, the BHPS, a longitudinal social survey of households and individuals living in the UK, was conducted each year to collect household panel data until 2009. The survey started with 5,000 households from a random selection within Great Britain. Additional samples of 1,500 households in both Scotland and Wales were added to the main sample in 1999, and in 2001 an additional 2,000 households were included in Northern Ireland, making the panel suitable for UK-wide research. In 2009, the UKHLS took BHPS´s place with 6,000 of BHPS participants.[7]

In this dataset, we consider individuals aged 16 years and older. The resulting sample size, depending on the variable of interest, is between 62,900 and 137,000 observations. The dataset contains detailed information about a representative population of the UK, including data on mental health, cognitive abilities, economic situation and financial well-being. The majority of the financial management and mental health variables of interest are collected across all waves. **Table 2** in the Appendix shows the summary statistics of the BHPS/UKHLS dataset.

Except the geographical dimension, the primary difference between the two datasets we use is the age of the sample. While the Understanding Society covers the representative sample of the general British population, SHARE targets individuals aged 50 years and older. Importantly, these are the people who are either retired or close to their retirement age, and are therefore less dependent on their labor income, while their accumulated pension wealth becomes more important.

In both datasets we control for individual characteristics of the household members, such as age, gender, education, marital status, number of children, labor market status of the head of the household. We also control for wealth in the analysis based on SHARE data and income in all settings.

We use the panel structure of the data in several ways. First, we control for individual fixed effects in the regressions, where appropriate. Therefore, the regression results capture changes over time for the same individual. Moreover, in some specifications, we use the change over time for the same individual as an outcome variable. Second, following Cocco et al. (2019) we use the measures of emotional and financial distress collected in previous periods to evaluate issues of potential causality.

In the SHARE dataset we control for country fixed effects or individual fixed effects, when appropriate, which allows us to receive the results net of unobserved heterogeneity. Most of the analysis is performed using OLS with robust standard errors.

**Mental Health measures**

The measure of mental health in the SHARE data is based on the so-called EURO-D scale. It is an established scale for research on mental health and depression. It is comprised of a number of questions about depression, pessimism, guilt, sleep patterns, interest, irritability, appetite, fatigue, concentration, enjoyment, and tearfulness. The maximum score a

[7] For further details see https://www.understandingsociety.ac.uk/documentation/mainstage/survey-timeline

respondent can have is 12 “very depressed” and the minimum score is 0 “not depressed”. We recode it in a dummy variable where mental distress is identified by a score of 4 or higher[8].

In the BHSPS/UKHLS, the measure of mental distress is based upon the General Health Questionnaire (GHQ12) which contains questions standard in psychological literature to identify common mental health conditions. We create a dummy equal to 1 if a respondent has reported having at least one of the symptoms.

While the EURO-D questionnaire in the SHARE is larger and covers more aspects than the measures of mental distress in the BHPS/UKHLS, the six items that provide the basis for the analysis in the British data are the core of the EURO-D questionnaire in the SHARE. A larger set of the questions is also attributed to the SHARE questionnaire, asking for more details with respect to each aspect. For instance, in both BHPS/UKHLS and SHARE, respondents are asked about their ability to concentrate. However, in the SHARE, it was done using two separate items: concentration in general, and ability to concentrate on reading. In the British survey, however, respondents are asked if “you recently (have) been able to concentrate on whatever you're doing”. (For more details, please see **Table 12**).

Both SHARE’s and the BHPS/UKHLS’s mental health measures are useful, in particular because they do not require diagnoses, and thus do not suffer from self-selection bias. In both surveys, mental health change is captured only shortly prior to the survey date (“last month” in the SHARE, or “recently” in the BHPS), thus leaving out the change which might have happened during the year.

**Self-assessed accomplishment and emotional health**

The BHP/UKHLS offers a unique opportunity to consider the effect of mental distress on the ability to accomplish tasks. In several waves of the survey, respondents are asked the following two questions: “During the past 4 weeks, how much of the time *you did work or other regular daily activities less carefully than usual as a result of any emotional problems*, such as feeling depressed or anxious?” and “During the past 4 weeks, how much of the time *have you accomplished less than you would like as a result of any emotional problems* (such as feeling depressed or anxious)?”

Using these questions allows us to safely assume the causal relation between mental health and the ability to perform tasks. A possible limitation could be the erroneous interpretation of the question by the respondents.[9] We address this issue by analysing the effect of mental health on the likelihood to report problems in accomplishing tasks or working carefully in a regression setting. For the purpose of the analysis, we create a dummy equal to 1 if the answer was either “all of the time”, “most of the time” or “some of the time” and zero otherwise. We then study the relation between individual’s perceived ability to accomplish tasks due to mental health, and the financial distress of the household in a regression, including mediation analysis.

**Self-efficacy**

The concept of not being able to accomplish tasks as expected is related to a more general concept of self-efficacy. Self-efficacy is an individual characteristic, a personal belief in one’s own ability to solve problems and execute actions required to accomplish given tasks.

[8] See Wagner, Gruber and Mehrbrodt (2019) for details on this methodology.

[9] It could be that relation between emotional well-being and efficacy is a part of the “vicious circle”, if inability to perform as required created emotional problem beforehand.

While there are several aspects of self-efficacy, two in particular have been linked to both mental health and financial distress (Kuhnen and Melzer, 2018; Clarke et al, 2014). The first is "*Control*", which is the ability to face problems and exercise control over events. The second aspect is "*Mastery*", which defines the perceived ability to accomplish tasks. Particularly *Mastery* has been shown to be an important source of self-efficacy (Bandura, 2010).

Both SHARE and the BHPS/UKHLS contain questions designed to measure *Control* and *Mastery.* In the SHARE, we use the responses to the following questions: "*How often do you feel that what happens to you is out of your control?*" and "*How often do you think that you can do the things that you want to do?*". We create a dummy variable equal to 1 if the answers were "often" or "sometimes" as opposed to "rarely" or "never". The BHPS/UKHLS contains a "self-efficacy module", which is comprised of 10 questions. We use the answers to 6 of those to identify *Mastery* and *Control* dimensions[10]. We create a dummy equal to 1 if an individual answer "not at all true" or "hardly true" and zero otherwise. Furthermore, we summarize the results over 3 variables, creating in this way a measure of intensity of self-efficacy mastery and control aspects (for details, please see **Table 12**).

**Financial distress**

Both SHARE and BHPS/UKHLS provide the self-assessed measure of financial distress. The SHARE uses the "make ends meet" survey question, asking individuals: "*Thinking of your household's total monthly income, would you say that your household is able to make ends meet…*" The BHPS/UKHLS asks respondents, "*How well would you say you yourself are managing financially these days?*"

The question in SHARE refers to income, and we control for wealth in all regression specifications. The BHPS/UKHLS asks about financial resources more generally, and may refer to both having sufficient income, as well as broader financial well-being.

As objective measure of financial strain, we use the indicator whether households have financial disarrays. In the SHARE survey, households are defined as having financial disarrays if they report having been more than 2 months behind with mortgage or rent payments, or repayments of loans. In the BHPS/UKHKLS survey, respondents are asked whether they have been late with their rent/mortgage payments. As an additional objective measure of financial arrears in the British data, we construct an indicator equal to 1 if households have no savings. For more details, please see **Table 12**.

[10] Using primary component analysis, we arrive at the similar structure. High Crombach-alpha (above 0.7) supports consistency of the measures.

# 3. Results

### 3.1 Mental health and financial distress: demographic profile

We find that mental health is strongly and negatively associated with financial distress, using both subjective as well as objective measures such as having arrears or having no savings. The effect of mental health on being in a precarious financial situation is comparable or larger than being unemployed, even considering the differences in income, wealth levels, education, family composition, physical health etc. **(SHARE, Figure 1** and **BHPS/UKHLS, Figure 2)**

For the UK population, mental health appears to be stronger related to financial distress for younger individuals, especially women. In fact, the age profile of the relation between mental health and financial distress has a hump shape, being highest for the age group 35-49 years old **(Figure 3)**. Importantly, it appears that the link between mental health and financial distress exists regardless of income level. At the same time, the effect of mental health on financial distress is relatively stronger for individuals in lower income groups: for households with below median income, the effect of mental health on financial distress is double the magnitude of that of higher income groups.

For the older population across European countries **(Figure 4),** the effect of mental health on financial distress appears to be very similar across gender and age groups. A possible explanation is that the SHARE sample is more homogeneous than the UK survey, as it targets people aged 50+. There is also less heterogeneity between income and wealth groups in the effect of mental health on financial distress. Importantly, these results take into consideration country and time fixed effects and are, therefore, independent of unobserved country-specific and time invariant heterogeneity.

Whereas experiencing depression, lack of sleep and general unhappiness appear to relate to financial well-being the most, other aspect of mental health such as the ability to concentrate does not seem to be a significant predictor or financial well-being. These findings are consistent along different expressions of financial distress, self-reported as well as having financial arrears and no savings (**Table 5**).

### 3.2. Mental health and financial distress: vicious circle?

One particularly important feature of the relation between mental health and financial distress is the time aspect and potential reverse causality. Even though there is a robust, significant association between mental health and financial distress, it is possible that while mental health influences a household's financial situation, financial worries may cause or aggravate mental health problems.

We consider this aspect of the relation between mental health and financial distress from several perspectives. First, comparing with the baseline estimation (**Table 3** and **Table 4**, column 1), we control for dummy equal to 1 if households reported financial distress in the previous period **(Table 3** and **Table 4**, column 2). The association between mental health and financial distress remains significant and robust, even though it is slightly smaller than for the baseline sample. This suggests that the association between mental health and financial well-being goes beyond recent experiences of financial hardship.

We find further support for this hypothesis controlling for time fixed effects as well as individual fixed effects **(Table 3** and **Table 4**, column 3). Including time fixed

effects into the specification decreases the coefficient on mental health by around 50%. Thus, we conclude that the relation between mental well-being and financial strain is **not** time-invariant. Taken together, we argue that **changes in mental health** are related to **changes in households' financial situation**. Finally, using the measures of mental health collected in the wave before financial distress was reported **(Table 3** and **Table 4**, column 4), we document that mental health in a previous period predicts a (worse) financial situation in the current period.

Last but not the least, these results are consistent across the older European population (**SHARE, Table 3**) as well as the representative population of the UK (**BHPS/UKHLS, Table 4**). While this analysis is not claiming causality, it provides evidence that mental health issues are strongly associated with financial difficulties in the household[11].

### 3.3 Mental health and financial distress: Possible explanations

We have shown that people with mental health problems are significantly more likely to have arrears, to have no savings and to say that they have difficulties to manage financially. The theoretical framework for the relationship between mental health and financial distress evolves around cognitive and non-cognitive abilities as well as economic preferences. In this section, we show that differences in cognitive abilities and risk aversion do not appear to explain our findings. Instead, there is evidence that aspects related to past and perceived own ability to solve problems and accomplish tasks matter.

**Risk aversion**

Given the evidence that emotional strain may affect preferences for risky choices (Bogan and Fertig, 2017), and the theoretical as well as empirical evidence that individual risk preferences influence financial outcomes of households, differences in risk aversion may be the link between mental health and financial distress. People who face mental health issues may avoid taking risks and accumulate savings "for a rainy day" which can impact the households' financial situation.

In line with the literature**,** we find that higher risk aversion is associated with financial distress, as can be seen in **Table 7**, column 2. However, the estimated coefficient on mental health barely changes when controlling for individuals' self-assessed financial risk aversion (comparing the effects of mental health on financial distress in column 1 and column 2 of **Table 7**).[12] Therefore, differences in risk aversion do not seem to account for the relation between mental health and financial distress.

**Cognitive Abilities: Memory**

One of the first physical symptoms of mental health issues is decline in memory (Knight et al., 2020). At the same time, memory has been shown to be an important predictor of financial decision-making as well as of quality of financial decisions (Goldfayn-Frank, 2016; and Mazzona et al., 2018). In line with the literature, we find that better memory is associated with lower financial distress (**Table 7,** column 3). However, our estimates of the relation between mental health and financial distress do not change when controlling for memory score comparing with the baseline (**Table 7**, column 1). Therefore, it is unlikely that better memory mitigates financial distress associated with psychological problems.

**Self-reported work accomplishment**

Recent literature provides evidence that people with mental health issues are less likely to do their

[11] The link between mental and financial well-being could be a part of a mechanism of the "vicious circle" as proposed by Cocco et al, 2019.

[12] In the SHARE survey, respondents are asked if they take substantial, above average, average or no financial risks.

job effectively (Bryan et al., 2020). Given that financial management is a complex task, and that mental health may impede effective performance, it is possible that individuals' lower efficiency due to mental distress may explain the relation between mental and financial distress.

In the British survey BHPS/UKHLS, respondents are asked if they worked less carefully or accomplished less due to emotional problems. 30 percent of the respondents give a positive answer to one of these questions (Table 2, summary statistics). Given that 40 percent of the respondents report emotional or psychological problems, it appears that a vast majority of the individuals with mental health issues report having performed worse than usual, due to their emotional problems, such as depression or anxiety.

Estimates in **Table 6** show that mental health is indeed a strong predictor of the self-assessed work accomplishment. In fact, individuals who report mental health issues are 30 percent more likely to say they have accomplished less and/or worked less carefully due to emotional problems during the last year (**Table 6,** Column 1 and 2).[13] This effect is economically very large and meaningful: given the sample mean of 30 percent, this translates into a rescaled effect of double size comparing to general population.

At the same time, the decline in individuals' past performance due to mental health can be shown to be strongly associated with financial distress of the household (**Table 6,** Column 4 and 5). This effect remains statistically significant when the specification includes both measures of past performance (accomplished less or worked less carefully), as well as an indicator of mental health issues. (**Table 6,** Column 6). Even though the coefficient of the mental health dummy decreases by about 15 percent, the remaining differences in mental health still explain a large share of variation in financial distress[14].

**Non-cognitive abilities: Self-efficacy**

Unlike past ability to accomplish tasks or work properly, self-efficacy refers to one's general belief about being able to influence outcomes in life. Kuhnen and Melzer (2018) link self-efficacy to better financial outcomes, while another strand of literature finds strong associations between self-efficacy, performance and mental health (Clarke et al., 2014).

Using the measures of self-efficacy, which are available and comparable in our datasets (see the discussion in the previous chapter as well as **Table 12**), we find that self-perceived ability to have control over life (*Control),* as well as belief in one's ability to achieve outcomes (*Mastery*) are indeed important determinants in explaining the effect of mental health on financial distress (**Table 7**, column 4 and **Table 8,** column 2). Specifically, *Mastery* and *Control* explain about a half of the variation in financial distress due to mental health**.** While significant for both lower-income and higher-income groups, lower self-efficacy accounts for half of the association between mental health and financial distress in the higher income group.

### 3.4 Mental health and financial distress: partner effect and delegation

Looking at households with couples, the mental health of both partners influences financial well-being, in both self-reported and objective measures

[13] The causal relation between lower ability to accomplish tasks and mental health cannot be established beyond doubt. It can be, in part, that due to mental health issues, respondents underestimate their performance. Still, the measures of the self-assessed performance used in this analysis have been extensively applied to study presenteeism in labor and health economics (Henry, 2019, Johnston et al.,2019).

[14] We also conduct a mediation analysis and find that individual past performance (measured as ability to accomplish tasks and/or work less carefully) mediates 10-15 percent of the effect of mental health on financial distress.

of financial distress (**Table 9**). Even though the effect of the financial decision-maker's[15] mental health is about twice as large in magnitude compared to the effect of spousal mental health, the difference is not statistically significant once we control for individual abilities of both partners[16].

Given that both subjective financial distress as well as objective measures (such as having no savings or having financial debt) are reported on the household level, differences could be due to measurement errors in partners' reporting. It is reasonable to assume that both members of the household are aware in case their household has no savings and/or is past due on rent payments. For the objective measure of financial disarray, however, reporting bias should be limited.

At the same time, we observe that having a mental health issue makes an individual in a couple's household significantly less likely to be the financial decision-maker (**Table 10**, column 1). The size of the effect of mental distress on being the households' financial head is comparable to the effect of education.[17] Better cognitive and non-cognitive abilities appear to have a compensatory effect for mental health (**Table 10,** column 2). Specifically, having better memory and a higher score on self-efficacy's *Control* measure have a positive, significant effect on being a financial decision-maker, and, at the same time, capture a large part of the variation due to the mental health. In line with existing research,[18] better abilities of the spouse make the partner less likely to become a financial decision-maker. This may suggest that, in case of mental health problems, the financial management responsibilities in the household are likely to be transferred to the spouse.

**Does intra-household delegation of financial responsibilities alleviate financial distress?**

For this analysis we consider two sub-groups of households: the first group consists of households where there was a switch in which partner did the financial reporting; in the other group of households, the reporting partner remained the same (**Table 11**, columns 2 and 3). One of the reasons for this split is to be able to deal with measurement error, which is possible when only one financial respondent reports about financial distress. When looking at the "no-switch" group, in both periods, financial distress was reported by one person only, whereas in the "switch" group, this was reported by 2 different people (the current financial respondent and the current partner in the previous period). As before, we assume that the reporting partner has the responsibility over his/her households' financial matters. When the switch occurs, the financial respondent is also the one reporting about financial distress.

We do not find that intra-household delegation alleviates financial distress. While the mental health of both partners matters for changes in financial distress in general (**Table 11**, Column 1), in a setting with only couple households, the effect of the dummy "no switch" (which is equal to 1 if there was a change in financial responsibilities and zero otherwise) is not statistically significant. This suggests that delegation of financial responsibilities does not produce significant change in financial distress.

Among households where delegation of financial responsibilities occurred (**Table 11**, column 3), only the mental health of the current as well as the previous financial respondent have a statistically significant effect on the change in financial distress.[19]

[15] Henceforth being financial decision-maker is measured by a proxy of being the financial respondent.
[16] The difference in magnitude of the effect of mental health of both partners on financial distress is smaller for the SHARE dataset (See **Table 11**).
[17] Here "education" is a categorical variable.
[18] See Goldfayn-Frank (2016).
[19] In this case, the partner was the financial respondent in the previous wave. Therefore, the lagged measure of mental health of the partner means the mental health of the financial respondent in the previous period.

This supports the hypothesis that the mental health of the person responsible for financial management matters most for the household's financial well-being.

# 4. Discussion

### 4.1 Mental health and financial distress: interpretations

Our findings suggest that mental health is significantly related to households' financial distress. This effect is large in magnitude and appears to be independent of income level or age, refuting the common wisdom of "old, sick and poor". These results are consistent across two different datasets, one covering a representative sample of the 50+ population in most of the European countries, and another one covering a representative sample of the population in the UK.

Including time fixed effects in the estimations decreases the magnitude of the relation between mental health and financial distress, which remains significant. This provides some evidence that episodic emotional distress may at least partially drive the association with financial difficulties. Interestingly, this contradicts the findings of Bogan and Fertig (2017), who study the effect of mental health on retirement savings. They find that the chronic expression of mental health drives the negative effect on retirement savings. However, in our setting we consider rather short-term outcomes, such as debt and short-term financial arrears. Thus, it is possible to conclude that while chronic psychological distress has more effect on long-term financial outcomes, the short- and medium-term mental distress has a stronger association with more time varying outcomes such as financial debt and financial disarrays.

Our study has several limitations. One is measurement error. It is possible that people under emotional distress, compared to being in a normal emotional state, report more pessimistic assessments. Subjective measures in particular are prone to this measurement error. We base our analysis on both self-reported subjective and objective measures of financial distress, and as we see similar results across the board, we believe the effect of this type of measurement error is limited.

Another limitation is the survey measurement error related to the practice that two different household members reported on the same outcome during the same time period[20]. Again, we argue that subjective measurements should be more likely to be subject to this kind of errors. Large financial movements, debts and delinquencies, as well as binary outcomes, such as having savings or not, should be visible to both partners in the household. Thus, we assume that the objective measures of financial well-being we use in our setting are less likely to be subject to reporting error.

A third limitation is the assumption that the financial respondent in the survey is indeed the person who manages the household's finances. This does not have to be the case, because, first, both partners in the household may manage finances either jointly or separately, and second, the financial respondent may be not the one managing the household's financial affairs. However, this is the assumption common in the literature (Mazonna et al., 2917, Korniotis et al., 2011). We also believe that in the older households, which are a part of the SHARE dataset we use, the traditional roles in the household are more common. Additionally, the surveys we use are conducted face-to-face, and the interviewer has to ask the "financially

[20] The same variable of interest at the same time period.

knowledgeable person" to complete this part of the interview. Likewise, given the details of the financial and income data collected by the survey, it would be difficult for a financially uninformed person in the household to answer the questionnaire. Finally, it has been shown that an alternative identification about financial responsibilities in the household – one based on an actual question about financial decision-making – reveals mostly the disagreement between the partners (Mazonna et al., 2017; Goldfayn et al., 2016). Thus, we conclude, the assumption we have to make is not unrealistic and the related measurement error should not substantially bias our results.

Finally, we cannot eliminate the issue of reverse causality. It is not a trivial task to establish whether psychological distress causes financial difficulties, or whether financial discomfort results in psychological problems. Our study limits itself therefore to describing the relation between mental health and financial distress of households, without claiming the causality. We can hypothesize however, based on the evidence we see and the research in the literature, what may be the link between emotional and financial well-being.

We find that individuals' beliefs in their own abilities – self-efficacy – explain a large share of the relationship between mental health and financial distress. The literature suggests several possible mechanisms through which self-efficacy may mediate the effect of mental health on financial problems. On the one hand, there is evidence that individuals with mental health issues are more likely to overspend, spend impulsively and save too little, often resulting in higher indebtedness and financial delinquencies, (Bayer et al., 2019). On the other hand, people with higher self-efficacy have been shown to be able to control their impulses better and have less debt. Thus, it could be that individuals with higher self-efficacy can better withstand the negative effect of psychological distress in terms of making better financial decisions.

Another strand of literature argues that mental health affects economic preferences, such as risk aversion and time preference, and thus influences financial outcomes. However, in our study we do not see that risk aversion or cognitive ability explain the link between mental health and financial strain in the household[21].

Finally, we find that self-assessed (in)ability to accomplish tasks due to mental stress is strongly and significantly related to financial distress of the household. We also see some evidence that suffering from psychological stress makes people more likely to delegate financial responsibilities. In the next paragraph, we would like to discuss the possible implications of these findings.

### 4.2 Implications: Intrinsic motivation and support

What could be done to support households under mental and financial distress?

Heckman, Pinto and Sevelyev (2013) show that interventions may influence non-cognitive abilities and lead to better economic outcomes and decisions. It is therefore possible that targeted measures designed to boost individuals' beliefs in their own ability may improve motivation and lead to better financial decisions. It could be the affirmative and supportive style of communication, highlighting the positive financial results ("You are on track to fulfilling your saving goals!") or demonstrating the performance relative to market/peer group ("Your investments performed as well as TexDax"). At the same time, commitment devices, such as automated monthly savings, would reduce the risk of "giving up".

[21] Cognitive abilities have been shown to have a strong link to time preference, as well as risk aversion (see Gaibaix at al, 2017). However, Gaibaix at al, 2017 refer mostly to numerical ability, while we consider memory.

Several national regulating bodies, notably in Australia, have issued guidelines and professional codes of conducts aiming to support people who suffer from psychological health issues when dealing with finances.[22] They range from deed assistance and monitoring in case of severe mental illness to financial advice in less severe instances. In our study, we see some evidence that people who are aware of their own worse performance due to mental stress are likely to delegate financial responsibilities. While delegation to family members does not appear to bring financial benefits, it may be that another form of financial delegation, e.g., to an independent assistant, could be more beneficial for the affected households. Such practice could be imbedded in the clinical or therapeutic management of psychological distress.

In the meanwhile, a financial tool which could lower the time and effort spent on managing finances and choosing financial allocations can bring important benefits. Once an optimal plan is made, the tool should help to commit to it, e.g., an automated payment of debt and arrears accounts, as well as allocation of saving and investments with "opt-out" rather than "opt-in" options.

Cocco, Gomez and Lopes (2019) write about a vicious circle: financial distress influences mental health, which in turn leads to financial distress. In our work, we aim to show that while mental health problems are strongly related to financial distress, this vicious circle could be broken: by providing motivation and support to manage.

[22] https://mhfa.com.au/sites/default/files/MHFA-financial-difficulties-mental-health-professional.pdf

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# 6. Appendix

**Table 1.** Summary Statistics: SHARE

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| Fin. Distress | 127354 | .08 | .27 | 0 | 1 |
| Fin. Disarray | 65067 | .11 | .31 | 0 | 1 |
| No saving | 88303 | .49 | .5 | 0 | 1 |
| Mental Distress | 127354 | .42 | .49 | 0 | 1 |
| Accomplished Less | 62942 | .33 | .47 | 0 | 1 |
| Work less carefully | 62713 | .31 | .46 | 0 | 1 |
| Control | 126332 | 2.69 | .72 | 0 | 3 |
| Mastery | 126385 | 2.73 | .68 | 0 | 3 |
| Female | 127354 | .43 | .5 | 0 | 1 |
| Age 20-34 | 127354 | .24 | .42 | 0 | 1 |
| Age 35-49 | 127354 | .43 | .5 | 0 | 1 |
| Age 50-64 | 127354 | .3 | .46 | 0 | 1 |
| Age 65+ | 127354 | .03 | .17 | 0 | 1 |
| Married | 127354 | .53 | .5 | 0 | 1 |
| Single | 127354 | .27 | .45 | 0 | 1 |
| Separated | 127354 | .04 | .19 | 0 | 1 |
| Divorced | 127354 | .14 | .34 | 0 | 1 |
| Widowed | 127354 | .03 | .16 | 0 | 1 |
| Worker | 127354 | .98 | .15 | 0 | 1 |
| Retired | 127354 | 0 | .07 | 0 | 1 |
| Not Working | 127354 | .02 | .13 | 0 | 1 |
| Number of children | 127354 | .69 | .98 | 0 | 8 |
| Monthly gross income (log) | 127354 | 7.99 | .63 | 1.47 | 12.71 |

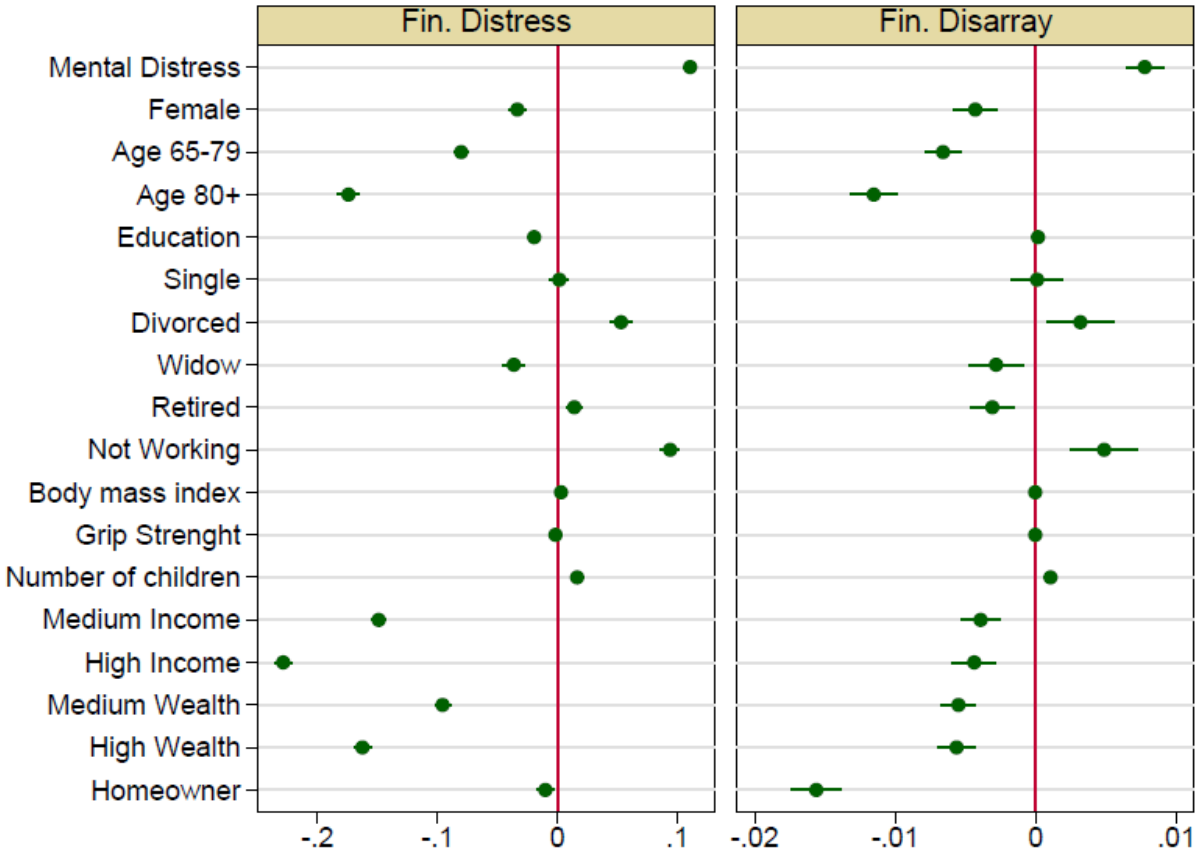
Note: This table displays summary statistics from the SHARE.

**Table 2.** Summary Statistics: BHPS/UKHLS

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| Fin. distress | 134968 | .37 | .48 | 0 | 1 |
| Fin. disarray | 134968 | .01 | .09 | 0 | 1 |
| Mental Distress | 134968 | .27 | .44 | 0 | 1 |
| Risk Aversion | 111404 | 3.69 | .59 | 1 | 4 |
| Memory | 134529 | 9.15 | 3.62 | 0 | 20 |
| Control | 119475 | .65 | .48 | 0 | 1 |
| Mastery | 119803 | .81 | .39 | 0 | 1 |
| Female | 134968 | .56 | .5 | 0 | 1 |
| Age 50-64 | 134968 | .47 | .5 | 0 | 1 |
| Age 65-79 | 134968 | .41 | .49 | 0 | 1 |
| Age 80+ | 134968 | .11 | .32 | 0 | 1 |
| Education | 134968 | 2.82 | 1.49 | 0 | 6 |
| Married | 134968 | .6 | .49 | 0 | 1 |
| Single | 134968 | .38 | .48 | 0 | 1 |
| Divorced | 134968 | .11 | .32 | 0 | 1 |
| Widow | 134968 | .19 | .4 | 0 | 1 |
| Worker | 134968 | .26 | .44 | 0 | 1 |
| Retired | 134968 | .58 | .49 | 0 | 1 |
| Not Working | 134968 | .16 | .36 | 0 | 1 |
| Homeowner | 134968 | .75 | .43 | 0 | 1 |
| Net Annual Income (log) | 134968 | 9.97 | 1.06 | 0 | 14.5 |
| Wealth (IHS) | 134968 | 11.33 | 4.27 | -15.66 | 18.1 |

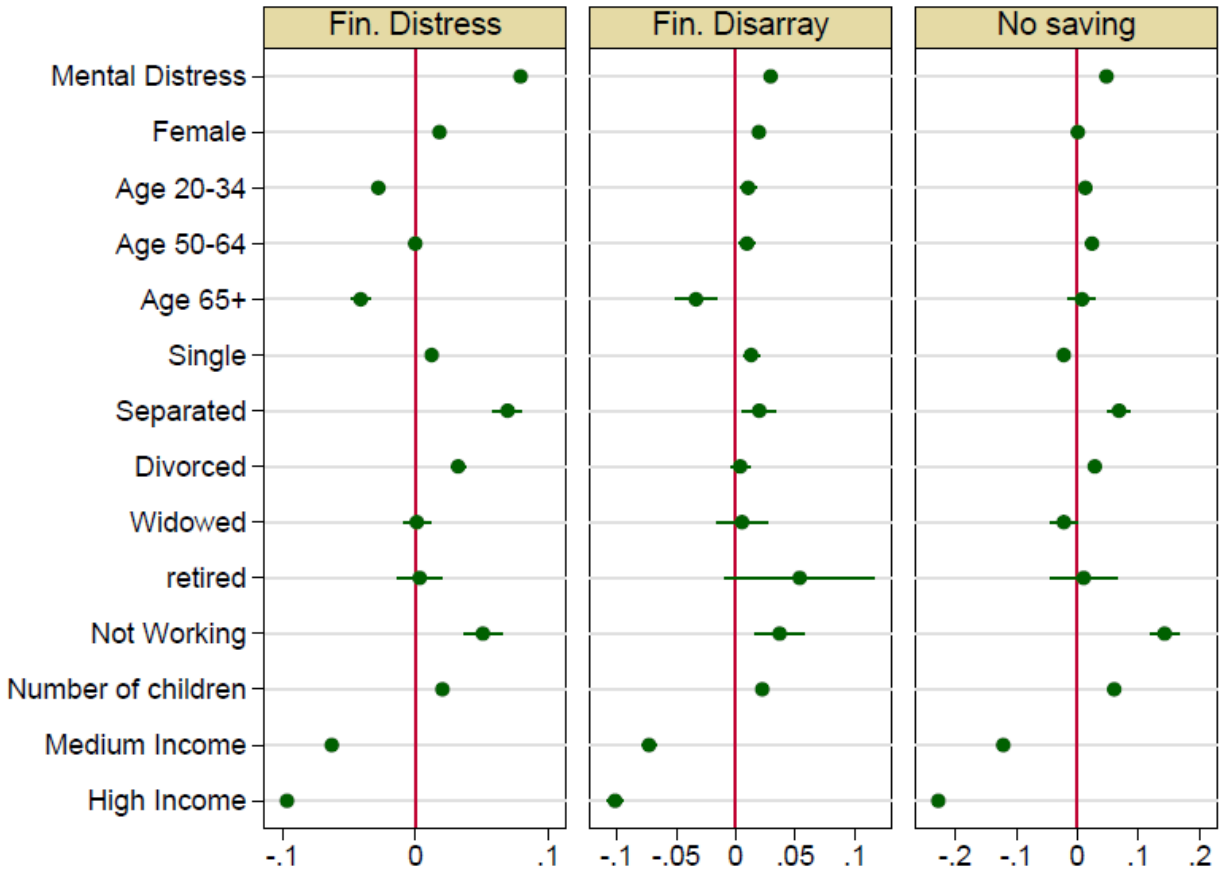
Note: This table displays summary statistics from the BHPS/UKHLS.

**Figure 1.** Effect of mental distress on financial situation (SHARE)



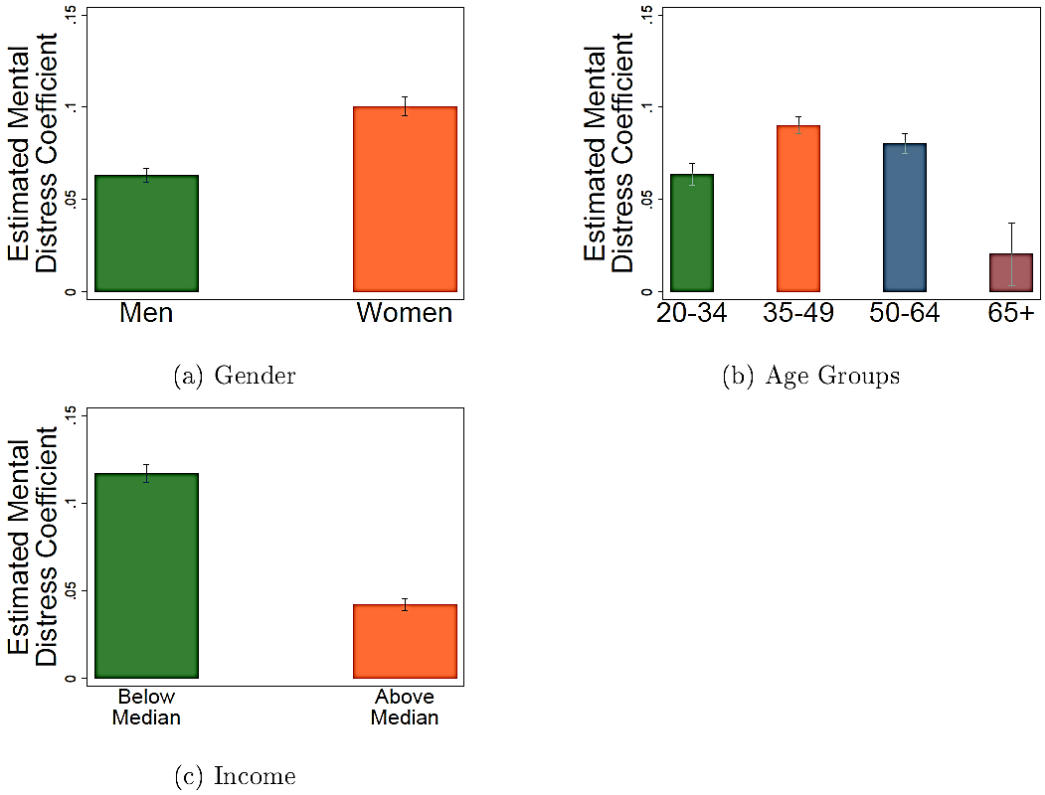

Note: This figure plots the estimated effects of mental distress and control variables on financial distress (left column) and financial disarray (right column). All estimates control for **country fixed effects**. 95-percent confidence bands are shown.

**Figure 2.** Estimated effect of mental distress on financial situation (BHPS/UKHLS)




Note: This figure plots the estimated effects of mental distress and control variables on financial distress (first column), financial disarray (second column) and having no savings (third column). All controls are displayed. 95-percent confidence bands are shown.

**Figure 3.** Estimated effect of mental distress on financial situation (BHPS/UKHLS)



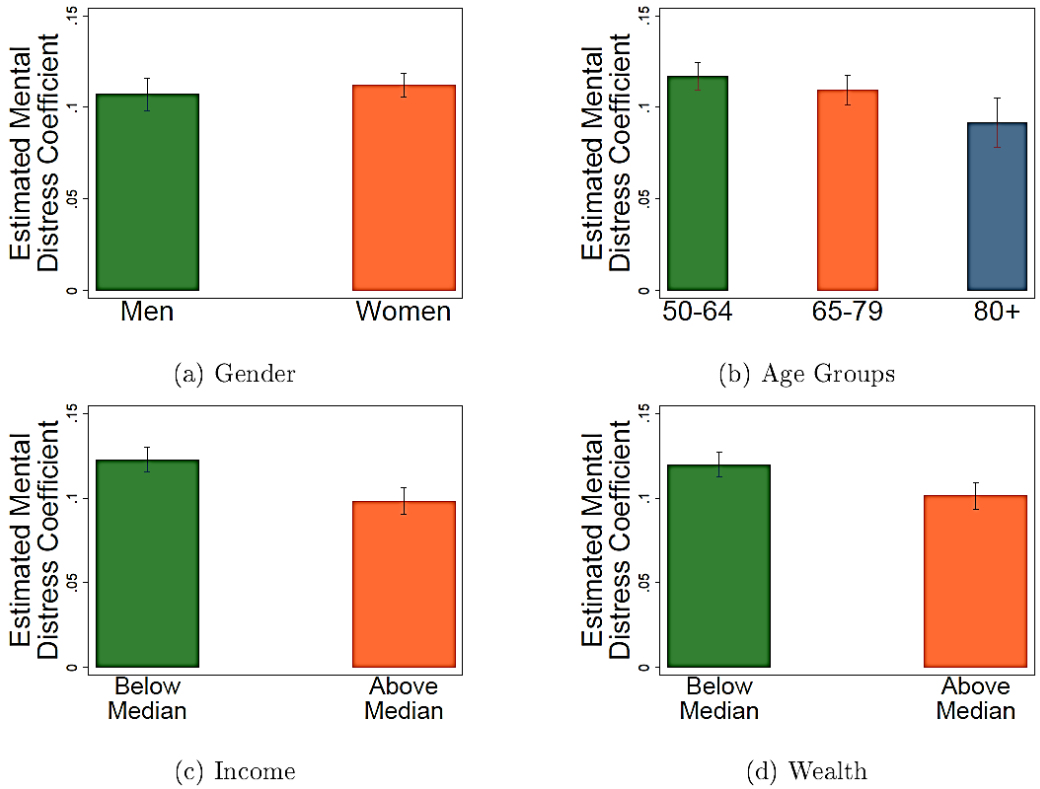

(a) Gender

(b) Age Groups

(c) Income

Note: This figure plots the estimated effects of mental distress on financial distress by gender, age, income and wealth groups. Income and wealth groups are defined as above and below median. All estimates control for gender, age, marital status, employment status, number of children and income. 95-percent confidence bands are shown.

**Figure 4.** Estimated effect of mental distress on financial situation, by cohorts (SHARE)




(a) Gender (b) Age Groups

(c) Income (d) Wealth

Note: This figure plots the estimated effects of mental distress on financial distress by gender, age, income and wealth groups. Income and wealth groups are defined as above and below median. All estimates control for gender, age, education, marital status, employment status, health measures, homeownership, number of children, income, wealth and country dummies. 95-percent confidence bands are shown.

**Table 3.** Mental health and Financial Distress relation over time (SHARE)

| VARIABLES | (1) Baseline Fin.Distress | (2) Fin.Distress t-1 Fin.Distress | (3) FE estimation Fin.Distress | (4) Mental health lag. Fin.Distress |
|---|---|---|---|---|
| Mental Distress | 0.111*** | 0.0776*** | 0.0326*** | 0.0886*** |
| | (0.00279) | (0.00401) | (0.00359) | (0.00452) |
| Fin Distress (lag) | | 0.363*** | | |
| | | (0.00454) | | |
| Mental Distress (lag) | | | | 0.0697*** |
| | | | | (0.00444) |
| Constant | 0.455*** | 0.289*** | 0.498*** | 0.434*** |
| | (0.0120) | (0.0168) | (0.0227) | (0.0181) |
| Observations | 134,968 | 58,598 | 134,968 | 58,756 |
| R-squared | 0.287 | 0.367 | 0.020 | 0.265 |
| Controls | YES | YES | YES | YES |
| TIME FE | NO | NO | YES | NO |
| IND FE | NO | NO | YES | NO |
| Mean Dep | 0.371 | 0.321 | 0.371 | 0.320 |

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: This table shows the estimated effects of mental distress on financial distress. Column 1 displays the baseline specification. In column 2 we control additionally if household experienced financial distress in the previous period. In column 3, time and individual fixed effects are included and therefore results present change over time net of constant individual characteristics. Column 4 includes control for mental health of the head of household in the previous period. All estimates control for gender, age group, education, marriage status, employment status and income. Robust standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

**Table 4.** Mental health and Financial Distress relation over time (BHPS/UKHLS)

| VARIABLES | (1) Baseline Fin. Distress | (2) Fin.Distress t-1 Fin. Distress | (3) FE estimation Fin. Distress | (4) Mental health lag. Fin. Distress |
|---|---|---|---|---|
| Mental Distress | 0.0791*** | 0.0679*** | 0.0418*** | 0.0617*** |
| | (0.00160) | (0.00153) | (0.00165) | (0.00184) |
| Fin. distress (lag) | | 0.315*** | | |
| | | (0.00552) | | |
| Mental Distress (lag) | | | | 0.0383*** |
| | | | | (0.00180) |
| Constant | 0.0742*** | 0.0544*** | 0.0838*** | 0.0547*** |
| | (0.00261) | (0.00250) | (0.0306) | (0.00296) |
| Observations | 127,354 | 127,354 | 127,354 | 92,509 |
| R-squared | 0.061 | 0.138 | 0.018 | 0.062 |
| Controls | YES | YES | YES | YES |
| TIME FE | NO | NO | YES | NO |
| IND FE | NO | NO | YES | NO |
| Mean Dep | 0.0794 | 0.0794 | 0.0794 | 0.0722 |

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: This table shows the estimated effects of mental distress on financial distress. Column 1 displays the baseline specification. In column 2 we control additionally if household experienced financial distress in the previous period. In column 3, time and individual fixed effects are included and therefore results present change over time net of constant individual characteristics. Column 4 includes control for mental health of the head of household in the previous period. All estimates control for gender, age group, education, marriage status, employment status and income. Robust standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

**Table 5.** Mental health components and Financial Distress (BHPS/UKHLS)

| VARIABLES | (1) Fin. Distress | (2) Fin. Distress | (3) Fin. Disarray | (4) Fin. Disarray | (5) No saving | (6) No saving |
|---|---|---|---|---|---|---|
| Mental distress | 0.0397*** | | 0.0138*** | | 0.0216*** | |
| | (0.000478) | | (0.000681) | | (0.000696) | |
| No Concentration | | 0.00184 | | -0.00539** | | -0.000435 |
| | | (0.00154) | | (0.00247) | | (0.00249) |
| Sleep Loss | | 0.0280*** | | 0.0198*** | | 0.0170*** |
| | | (0.00102) | | (0.00166) | | (0.00185) |
| Depressed | | 0.0244*** | | 0.0192*** | | 0.0316*** |
| | | (0.00104) | | (0.00177) | | (0.00198) |
| Not enjoy daily act | | 0.0159*** | | 0.00411* | | 0.00593** |
| | | (0.00145) | | (0.00243) | | (0.00244) |
| Unhappiness | | 0.0254*** | | -0.00141 | | 0.00901*** |
| | | (0.00151) | | (0.00233) | | (0.00246) |
| Under strain | | 0.0217*** | | -0.00156 | | 0.00270 |
| | | (0.00104) | | (0.00173) | | (0.00199) |
| Constant | 0.0849*** | -0.103*** | 0.196*** | 0.144*** | 0.499*** | 0.397*** |
| | (0.00489) | (0.00591) | (0.0170) | (0.0178) | (0.00717) | (0.00877) |
| Observations | 271,066 | 266,582 | 112,221 | 109,680 | 187,835 | 185,050 |
| R-squared | 0.121 | 0.126 | 0.035 | 0.037 | 0.061 | 0.064 |
| Controls | YES | YES | YES | YES | YES | YES |
| TIME FE | YES | YES | YES | YES | YES | YES |
| IND FE | NO | NO | NO | NO | NO | NO |
| Mean Dep | 0.0990 | 0.0988 | 0.161 | 0.161 | 0.0931 | 0.0930 |

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: This table shows the estimated effects of mental distress on various measures of financial distress. Column 1 displays the baseline specification. In columns 2, 4 and 6 we use components of mental health as explanatory variables. Time fixed effects are included and therefore results present change over time. Column 4 includes control for mental health of the head of household in the previous period. All estimates control for gender, age group, education, marriage status, employment status and income. Robust standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

**Table 6.** Mental health and financial distress mechanism: Labor productivity (BHPS/UKHLS)

| VARIABLES | (1) Accomplished Less | (2) Work less carefully | (3) Fin. Distress | (4) Fin. Distress | (5) Fin. Distress | (6) Fin. Distress |
|---|---|---|---|---|---|---|
| Mental Distress | 0.337*** | 0.313*** | 0.0832*** | | | 0.0700*** |
| | (0.00376) | (0.00373) | (0.00239) | | | (0.00250) |
| Accomplished Less | | | | 0.0589*** | | 0.0166*** |
| | | | | (0.00254) | | (0.00343) |
| Work less carefully | | | | | 0.0610*** | 0.0243*** |
| | | | | | (0.00264) | (0.00354) |
| Constant | 0.185*** | 0.161*** | 0.105*** | 0.117*** | 0.119*** | 0.0977*** |
| | (0.00708) | (0.00694) | (0.00476) | (0.00482) | (0.00482) | (0.00476) |
| Observations | 62,701 | 62,701 | 62,701 | 62,701 | 62,701 | 62,701 |
| R-squared | 0.139 | 0.128 | 0.067 | 0.056 | 0.056 | 0.071 |
| Controls | YES | YES | YES | YES | YES | YES |
| TIME FE | YES | YES | YES | YES | YES | YES |
| IND FE | NO | NO | NO | NO | NO | NO |
| Mean Dep | 0.335 | 0.309 | 0.0839 | 0.0839 | 0.0839 | 0.0839 |

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: This table shows the estimated effects of mental distress on individual perceived productivity (columns 1-2) and the relation to financial distress (columns 3-6). All estimates control for gender, age group, education, marriage status, employment status and income. Robust standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

**Table 7.** Mental health and financial distress mechanism: risk preferences, cognitive and non-cognitive abilities (SHARE).

| VARIABLES | (1) Fin.Distress | (2) Fin.Distress | (3) Fin.Distress | (4) Fin.Distress |
|---|---|---|---|---|
| Mental Distress | 0.111*** | 0.109*** | 0.110*** | 0.0844*** |
| | (0.00279) | (0.00309) | (0.00281) | (0.00304) |
| Risk Aversion | | 0.00733*** | | |
| | | (0.00215) | | |
| Memory | | | -0.00183*** | |
| | | | (0.000375) | |
| Control | | | | -0.0808*** |
| | | | | (0.00268) |
| Mastery | | | | -0.0614*** |
| | | | | (0.00328) |
| Constant | 0.484*** | 0.460*** | 0.494*** | 0.575*** |
| | (0.0124) | (0.0165) | (0.0126) | (0.0132) |
| Observations | 134,968 | 111,404 | 134,529 | 119,276 |
| R-squared | 0.288 | 0.282 | 0.289 | 0.303 |
| Controls | YES | YES | YES | YES |
| TIME FE | YES | YES | YES | YES |
| IND FE | NO | NO | NO | NO |
| Mean Dep | 0.371 | 0.351 | 0.370 | 0.368 |

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: This table shows the estimated effects of mental distress on financial distress controlling for risk aversion (column 2), memory (column 3), and non-cognitive abilities (column 4). Column 1 displays the baseline specification. All estimates control for gender, age group, education, marriage status, employment status and income. Robust standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

**Table 8.** Mental health and Financial Distress relation: Non-cognitive abilities. (BHPS/UKHLS)

| VARIABLES | (1) Fin. Distress | (2) Fin. Distress |
|---|---|---|
| Mental Distress | 0.0798*** | 0.0440*** |
| | (0.00159) | (0.00167) |
| Control | | -0.0480*** |
| | | (0.00206) |
| Mastery | | -0.0115*** |
| | | (0.00215) |
| Constant | 0.0990*** | 0.278*** |
| | (0.00648) | (0.00846) |
| Observations | 127,354 | 126,300 |
| R-squared | 0.067 | 0.086 |
| Controls | YES | YES |
| TIME FE | YES | YES |
| IND FE | NO | NO |
| Mean Dep | 0.0794 | 0.0794 |

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: This table shows the estimated effects of mental distress on financial distress controlling for non-cognitive abilities (column 2). Column 1 displays the baseline specification. All estimates control for gender, age group, education, marriage status, employment status and income. Robust standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

**Table 9.** Mental health and financial responsibilities (BHPS/UKHLS)

| VARIABLES | (1) Fin. Distress | (2) Fin. Disarray | (3) No saving |
|---|---|---|---|
| Mental Distress | 0.0461*** | 0.0148*** | 0.0239*** |
| | (0.00192) | (0.00333) | (0.00474) |
| Mental Distress - Partner | 0.0274*** | 0.00626* | 0.0171*** |
| | (0.00189) | (0.00330) | (0.00473) |
| Constant | 0.107*** | 0.237*** | 0.621*** |
| | (0.00995) | (0.0326) | (0.0277) |
| Observations | 71,337 | 34,052 | 51,028 |
| R-squared | 0.059 | 0.035 | 0.058 |
| Controls | Yes | Yes | Yes |
| TIME FE | YES | YES | YES |
| IND FE | NO | NO | NO |
| Mean Dep | 0.0588 | 0.0866 | 0.478 |

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: This table shows the estimated effects of mental distress of both partners in the household on various measures of financial distress. All estimates control for gender, age group, education, marriage status, employment status and income. Robust standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

**Table 10.** Mental health and financial responsibilities (SHARE)

| VARIABLES | (1) Fin Resp | (2) Fin Resp |
|---|---|---|
| Mental Distress | -0.0263*** | -0.0124** |
| | (0.00586) | (0.00599) |
| Mental Distress - partner | 0.00317 | -0.00252 |
| | (0.00486) | (0.00500) |
| Mastery | | 0.00461 |
| | | (0.00574) |
| Mastery - partner | | 0.0140** |
| | | (0.00567) |
| Control | | 0.0101** |
| | | (0.00483) |
| Control - Partner | | -0.00858* |
| | | (0.00473) |
| Memory | | 0.0161*** |
| | | (0.000722) |
| Memory - partner | | -0.0147*** |
| | | (0.000709) |
| Education | 0.0290*** | 0.0235*** |
| | (0.00188) | (0.00190) |
| Education - partner | -0.0211*** | -0.0159*** |
| | (0.00197) | (0.00199) |
| Retired | 0.0557*** | 0.0604*** |
| | (0.00701) | (0.00699) |
| Retired - partner | -0.0357*** | -0.0408*** |
| | (0.00693) | (0.00689) |
| Not working | 0.0324*** | 0.0387*** |
| | (0.00972) | (0.00968) |
| Not working - partner | 0.0176** | 0.0104 |
| | (0.00689) | (0.00688) |
| Constant | 0.436*** | 0.424*** |
| | (0.0151) | (0.0182) |
| Observations | 53,425 | 53,425 |
| R-squared | 0.034 | 0.047 |
| Controls | YES | YES |
| TIME FE | YES | YES |
| IND FE | NO | NO |
| Mean Dep | 0.533 | 0.533 |

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: This table shows the estimated effects of mental distress on a proxy measure for being a financial decision-maker in the family. Column 1 presents the baseline estimates, in the column two the effect of cognitive (memory) and non-cognitive is considered. All estimates control additionally for gender, age group, marriage status, income. Robust standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1

**Table 11.** Mental health and change in financial distress: delegation (SHARE)

| VARIABLES | (1) All Δ Fin Distress | (2) No Switch Δ Fin Distress | (3) Switch Δ Fin Distress | (4) All - lag1 Δ Fin Distress |
|---|---|---|---|---|
| Mental Distress | 0.0294*** | 0.0282*** | 0.0307** | 0.0262** |
| | (0.00724) | (0.00884) | (0.0126) | (0.0121) |
| Mental Distress - partner | 0.0190*** | 0.0208** | 0.0169 | 0.0262* |
| | (0.00694) | (0.00823) | (0.0129) | (0.0139) |
| Mental Distress (lag) | -0.0207*** | -0.0261*** | -0.0108 | |
| | (0.00730) | (0.00889) | (0.0128) | |
| Mental Distress - partner (lag) | -0.0376*** | -0.0345*** | -0.0443*** | -0.0409*** |
| | (0.00705) | (0.00838) | (0.0130) | (0.0135) |
| No switch | | | | -0.0131 |
| | | | | (0.0126) |
| Constant | -0.0134 | 0.000264 | -0.0386 | -0.0108 |
| | (0.0159) | (0.0190) | (0.0289) | (0.0435) |
| Observations | 31,320 | 21,399 | 9,921 | 6,715 |
| R-squared | 0.013 | 0.013 | 0.019 | 0.017 |
| Controls | YES | YES | YES | YES |
| Mean Dep | 0.305 | 0.302 | 0.310 | 0.447 |

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: This table shows the estimated effects of mental health – present and lagged - of both partners on change in financial distress, in case of switch in household responsibilities within a household between periods (column 2 and 3), or with the same decision-maker. Column 1 displays the baseline specification for all observations. In column 2, only those households are considered where there was no change of household respondent between the waves, whereas in column 3 only those households are considered where the change took place. In column 4, only those who had a mental health problem in previous period are considered. “No switch” dummy equals 1 if there was no change in reporting person. All estimates control for gender, age group, education, marriage status, employment status and income. Robust standard errors are in parenthesis. *** p<0.01, ** p<0.05, * p<0.1

**Table 12**. Variable description: SHARE and BHPS/UKHLS

| Variables | SHARE | BHPS/UKHLS |
|---|---|---|
| Fin distress 0/1 | Thinking of your household's total monthly income, would you say that your household is able to make ends meet…<br>**1.** With great difficulty<br>**2.** With some difficulty<br>3. Fairly easily<br>4. Easily | How well would you say you yourself are managing financially these days? Would you say you are…<br>1.Living comfortably<br>2.Doing alright<br>3. Just about getting by<br>**4.** Quite difficult<br>**5.** Very difficult |
| Fin disarray 0/1 | In the last twelve months, have you ever found yourself more than two months behind with your rent/mortgage repayments/loans?<br>Yes/No | In the last twelve months, have you ever found yourself behind with your rent/mortgage?<br>Yes/No |
| Mental Distress | Euro-d items:<br>**1) In the last month, have you been sad or depressed?**<br>**2) What are your hopes for the future?**<br>3) In the last month, have you felt that you would rather be dead?<br>4) Do you tend to blame yourself or feel guilty about anything?<br>5) So, for what do you blame yourself?<br>**6) Have you had trouble sleeping recently?**<br>7) In the last month, what is your interest in things?<br>8) So, do you keep up your interests?<br>9) Have you been irritable recently?<br>10) What has your appetite been like in the last month?<br>11) So, have you been eating more or less than usual?<br>**12) In the last month, have you had too little energy to do the things you wanted to do?**<br>**13) How is your concentration?**<br>14) Can you concentrate on something you read?<br>**15) What have you enjoyed doing recently?**<br>16) In the last month, have you cried at all? | GHQ items:<br>• Have you recently been feeling unhappy or depressed?<br>• I've been feeling optimistic about the future.<br>• Have you recently lost much sleep over worry?<br>• Did you have a lot of energy?<br>• Have you recently been able to concentrate on whatever you're doing?<br>• Have you recently been able to enjoy your normal day-to-day activities? |
| Memory | The test consists of verbal registration and recall of a list of 10 words. The respondent listens to a list of words once and gets tested two times, once immediately after the encoding phase (first trial) and once after a delay time (delayed recall). | |
| Working less carefully | | During the past 4 weeks, how much of the time you **did work or other regular daily activities less carefully than usual** as a result of any emotional problems, such as feeling depressed or anxious?<br>1) All of the time<br>2) Most of the time<br>3) Some of the time |

| | | |
|---|---|---|
| | | 4) A little of the time<br>5) None of the time |
| Accomplish Less | | During the past 4 weeks, how much of the time **have you accomplished less than you would like** as a result of any emotional problems (such as feeling depressed or anxious)?<br>6) All of the time<br>7) Most of the time<br>8) Some of the time<br>9) A little of the time<br>10) None of the time |
| Self-efficacy Control | How often do you feel that what happens to you is out of your control?<br>1. Often 2. Sometimes 3. Rarely 4. Never | 1) Have you recently been able to face up to problems?<br>2) Have you recently felt you couldn't overcome your difficulties?<br>3) Have you recently felt that you were playing a useful part in things? |
| Self-efficacy Mastery | How often do you think that you can do the things that you want to do?<br>1. Often 2. Sometimes 3. Rarely 4. Never | 1) Have you recently felt capable of making decisions about things?<br>2) Have you recently been losing confidence in yourself?<br>3) Have you recently been thinking of yourself as a worthless person? |

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