

# Financial distress and suicidal behaviour during COVID-19: Family identification attenuates the negative relationship between COVID-related financial distress and mental ill-health

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## Abstract

COVID-19 provides a ‘perfect storm’ of social and economic suicide risk-factors. Recent research has evidenced an initial impact of the pandemic upon suicide rates, but has yet to understand how elevated financial threat and social isolation may predict suicide ideation/behaviour, or which social factors promote resilience. This study addressed these shortcomings. An online longitudinal survey study ( $N=370$ ) which took place from May to September 2020 showed COVID-related financial distress predicts suicidal thoughts and behaviour via increased depression and loneliness. Family identification attenuates these relationships. Our findings reaffirm the importance of social factors in reducing mental ill-health outcomes of economic crises.

## Keywords

COVID-19, financial stress, loneliness, social cure, suicide

## Introduction

The COVID-19 pandemic has been characterized as a ‘perfect storm’ of risk factors for suicide (Reger et al., 2020). Health and economic threats combined with social distancing measures are likely to have a corrosive effect on mental health, and increase the likelihood of suicide. Initial studies appear to bear these predictions out. While the global picture remains unclear (John et al., 2020), the first set of nationally-representative surveys from the USA showed a heightened risk of suicide across the general population, with particular

effects among vulnerable ethnic and demographic sub-groups (Fitzpatrick et al., 2020). Looking specifically at areas affected by social distancing measures, Bryan et al. (2020) found associations

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between multiple stressors and depression, relationship and legal disputes and suicide ideation. Similarly, Gratz et al. (2020) found an association between social restrictions and suicide risk through a lowered sense of social inclusion.

While these studies highlight the social impact of the pandemic on suicide, they have found less clear evidence of the economic impacts. This may be due to when the surveys were conducted (March–April 2020, when the pandemic's economic impacts were in their infancy), as well as economic impact not being the authors' primary research focus. In order to address these shortcomings, we will use the present study to first consider how pandemic-related economic consequences may affect suicidal behaviour, before presenting results from our longitudinal survey on this topic conducted from May–September 2020.

### *The impact of economic crises on suicide: Theory and evidence*

It is a longstanding tenet of suicidology that suicide rates increase during economic crises (Coope et al., 2015). Recently, analyses of countries adversely affected by the 2008 Global Financial Crisis have shown clear population-level associations between the effects of economic recession and suicide rates (Coope et al., 2015; Laanani et al., 2015; Matsubayashi et al., 2020; Sinyor et al., 2017). This has commonly been attributed to a number of specific outcomes of recessions which impact individuals' lives: increased unemployment and job insecurity (Kawohl and Nordt, 2020; Laanani et al., 2015); decreased earnings and increased debt (e.g. Coope et al., 2015), and more personal financial crises (e.g. evictions and foreclosures: Fowler et al., 2015). These effects are noted to be particularly impactful on groups that are already economically and psychologically vulnerable (e.g. Ntountoulaki et al., 2017).

Theoretically, the ways in which these economic factors give rise to suicide is thought to occur through various social and psychological processes. In the earliest theories derived from Durkheim's sociological research, economic crises were thought to weaken social ties

and reduce purposefulness, further increasing already-vulnerable individuals' risk of suicidal behaviour (Giddens, 1965). These social psychological factors have been reworked in more modern psychological theories, including Joiner's (2005) Interpersonal Psychological Theory of Suicide, which argues that 'thwarted belongingness' and 'perceived burdensomeness' are necessary precursors to suicidal ideation. Similarly, O'Connor's Integrated Motivational-Volitional Model (O'Connor and Kirtley, 2018) examines the social context of individuals' lives, thereby identifying risk factors and triggering events which may serve to prompt suicidal thoughts, whilst conceptualising social support and perceived burdensomeness as potential moderators of these effects. While these theories have yet to explicitly tie social factors to economic crises, all acknowledge the pivotal role played by stressors such as financial stress, and buffers such as social support, in predicting suicidal behaviour.

The empirical evidence points to three mechanisms through which economic crises translate into suicidal behaviour. First, financial hardship can lead to *financial distress*, whereby a person feels unable to cope with the financial pressures they face. When financial challenges are viewed as a threat and the individual feels unable to cope, they may experience anxiety and depression, which in turn are associated with increased suicide risk (e.g. Assari, 2018; Fiksenbaum et al., 2017). Financial distress itself has been found to constitute a unique risk factor for self-injury and suicide across a range of different age groups, occupations and nations (Almeida et al., 2012; Duberstein et al., 2004; Fagg et al., 2006; Wang, 2015), with those experiencing cumulative financial strains being found to have up to twenty times higher suicide risk than those without (Elbogen et al., 2020).

While individuals may be financially autonomous, most belong to households or family units which share a degree of financial interdependence. Accordingly, a second way in which financial hardship impacts on mental health is through *undermining close personal relationships*. Interpersonal factors are known to play a pivotal role in suicide risk (Joiner and Rudd, 1995), and

family financial stress in particular is known to erode family members' mental health (Conger et al., 2002; Prime et al., 2020). In turn, family conflict (particularly finance-related conflict) has been associated with increased suicide (Assari, 2018; Duberstein et al., 2004; Fagg et al., 2006; Wang, 2015).

A third way in which financial hardship can predispose individuals towards suicidal behaviour is through *its socially isolating effects*. Social isolation, exclusion and loneliness have long been understood to be risk factors for suicidality and self-injurious behaviour (Stravynski and Boyer, 2001), and when combined with financial stress, they can have multiplicative effects on suicide risk (Assari, 2018). Financial hardship can also serve to isolate individuals and families by depriving them of the means to socialise, as well as through the shame and stigma associated with financial deprivation and debt (Eckhard, 2018; Samuel et al., 2018; Starrin et al., 2009). In sum, financial stress is a unique predictor of suicidality, which both creates and compounds the psychological vulnerability caused by social isolation and loneliness.

### *A social cure for financial crises?*

The three influences outlined above point to the need to combat the negative psychological impacts of financial hardship. The Social Identity Approach to Health, otherwise known as the 'Social Cure' perspective (Haslam et al., 2018) suggests one way of doing so. It demonstrates that psychologically-meaningful group memberships are fundamental to reducing feelings of stress (including financial stress), and enhancing perceived coping abilities (Wakefield et al., 2019). This is because the social groups with which we identify provide support to help us deal with the challenges we face, thereby reducing health-threatening stress and anxiety (Haslam et al., 2018).

Psychologically-meaningful group memberships also provide members with a sense of purpose in life, which serves to reduce depression and hopelessness, as well as encouraging healthy behaviours (e.g. Sani et al., 2015a, 2015b). The

beneficial effects of meaningful group memberships are cumulative, and serve to buffer individuals from the impacts of major life-changes, including retirement, relocation and illness (e.g. Steffens et al., 2016; Iyer et al., 2009). Additionally, belonging to social groups can protect against loneliness (e.g. Kellezi et al., 2019). This is important, as loneliness predicts of a range of negative health outcomes, including increased anxiety and depression and an inability to gain support from others when facing life's challenges (e.g. Cacioppo and Cacioppo, 2018).

Moreover, a range of studies have shown that group memberships can provide resilience to economic threats. For example, McNamara et al. (2013) showed how deprived communities provide their members with the psychological resources needed to deal with the challenges of economic marginalisation, while Fong et al. (2019) showed how neighbourhood identification buffers the impact of socio-economic disadvantage on residents' mental health. Family identification in particular has been shown to provide significant resilience to the negative mental health effects of financial distress. At the household level, parental support offsets the effects of the stigma associated with economic deprivation (Bradshaw et al., 2016). Stevenson et al. (2020) also demonstrated that the support provided by cohesive families served to improve mental health, increase resilience to financial challenge and reduce financial distress. Social identities can thus provide resources to counter the effects of economic crises and, in particular, family identity can promote resilience and support one's mental health whilst experiencing financial hardship. However, as important as this research is, it has yet to apply these insights to the exploration of the effects of economic crises on suicidal behaviour: a shortcoming we intend to remedy in the present study.

### *The specific context of the UK COVID-19 pandemic*

In the UK, the financial effect of the current COVID-19 pandemic looks to be more severe than the Global Financial Crisis of 2008, and is

now being framed as the ‘deepest recession in modern economic history’ (Resolution Foundation, 2020a): the Bank of England forecasted a 25% shrink in the economy in the second quarter of 2020, with an overall shrinkage of 14% for the year. The impact on employment has been dramatic, with an initial 450,000 job losses in April 2020, which have disproportionately affected younger workers, lower earners and those in non-standard employment. As of 17th May 2020, those claiming unemployment-related benefit passed 2.1 million: 0.5 million higher than at the peak of the Global Financial Crisis (Resolution Foundation, 2020b).

The crisis has disproportionately affected the most economically vulnerable; with an estimated 30% of property renters already behind with payments, and 41% of agency workers and 38% of 0-hours contract workers falling behind on bills (Citizens’ Advice Bureau, 2020a). This has created food insecurity: the Trussell Trust reports an 81% increase in demand for their foodbank services in the last 2 weeks of March 2020, compared to the same time last year (Trussell Trust, 2020). The Citizens Advice Bureau reports a 105% increase in local inquiries about redundancy, and a 94% increase in inquiries concerning pay and welfare entitlements, but expects this demand to escalate considerably in the coming months, as various Government support schemes to support furloughed workers and those unable to pay debts come to a close (Citizens’ Advice Bureau, 2020b).

In addition to these escalating financial pressures, the COVID-19 pandemic has been tackled in most countries through the use of quarantining or social distancing measures. Within the UK, restrictions were placed on the movements and social interactions of the entire population, with total isolation imposed upon 1.7 million of the most medically vulnerable individuals. These measures have caused considerable social disruption to the majority of people, leading to an upsurge in loneliness among the most vulnerable, including those in poor health, the disabled, adults living alone and those in rented accommodation (ONS, 2020).

Given what we know about the relationships between financial stress, loneliness and suicide, we could reasonably expect the financial challenges of the pandemic to impact substantially upon mental health and suicidal behaviours across the general population. Moreover, the social distancing and shielding measures put in place to reduce the virus’ spread are likely to negatively impact on mental health, especially that of the most vulnerable individuals and families (Prime et al., 2020). Areas of low socio-economic status and community cohesion are likely to be disproportionately affected by income loss and unemployment, as well as by COVID-19 infection and mortality (Wang and Tang, 2020). However, family identification should provide individuals with some level of resilience against the negative effects of financial stress in the current crisis, though providing supportive relationships and a shared perspective on the threat (Prime et al., 2020). We thus urgently need to gain insight into the relationships between financial distress, mental health and suicidal behaviours during the pandemic, as well as whether family identification might offset these relationships. The present study is intended to address these issues. Specifically, we predict:

H1. Participants with higher levels of COVID-related financial distress at T1 are more likely to report higher levels of suicidal thoughts/behaviour at T2.

H2. The relationship between COVID-related financial distress and suicidal thoughts/behaviour will be mediated by the dimensions of mental health that are known to impact on suicidal thoughts/behaviour (loneliness, anxiety and depression). Specifically, COVID-related financial distress at T2 will positively predict loneliness, anxiety and depression at T2, and, in turn, these mental health variables will positively predict suicidal thoughts/behaviour at T2.

H3. The mediation model described in H2 will be attenuated by family identification at T1, which will negatively predict COVID-related

financial distress at T2, thereby predicting lower levels of mental ill-health at T2 and, ultimately, lower levels of suicidal thoughts/behaviour at T2.

## Method

### *Design, participants and procedure*

Four-hundred and fifty-seven participants completed an online survey in May 2020 (321 females, 136 males;  $M_{age}=37.60$  years,  $SD=12.30$ ,  $range=18-87$ ). Participants were recruited via Prolific Academic and were paid £3.13 for their participation. The study was approved by the authors' institutional ethics committee. Participants were informed of the survey's sensitive topic matter on the Participant Information Screen, were able to stop participating at any point, and were provided with sources of support on the Debrief Screen.

Four months later (September 2020), participants were asked to complete the same survey again. They were again paid £3.13. Three-hundred and seventy (80.96%) of the T1 participants completed the T2 survey, which is thus our total sample size (103 males, 267 females;  $M_{age}=37.93$ ,  $SD=12.43$ ,  $age\ range=18-87$ ). All participants lived in the UK and were over the age of 18. We computed an a priori minimum sample size of 139 for a multiple linear regression featuring 15 predictors (i.e. the most complex model we tested: one predictor, four mediators, 10 control variables), assuming 0.80 power and medium effect-size ( $f^2=0.15$ ).

Independent samples *t*-tests were conducted to compare the T1 participants who did vs. did not complete the T2 survey. These groups did not differ significantly in terms of their scores on any of the T1 key variables: family identification ( $p=0.16$ ), COVID-related financial distress ( $p=0.57$ ), loneliness ( $p=0.22$ ), anxiety ( $p=0.75$ ), depression ( $p=0.93$ ), suicidal thoughts/behaviours ( $p=0.28$ ), age ( $p=0.24$ ), or income ( $p=0.18$ ). Based on these analyses, it was concluded that the participants who completed the T2 survey were a good representation of the sample as a whole.

## Measures

Full details of all measures can be found in Supplemental Box 1. At both time-points we measured *family identification* with the Group Identification Scale (Sani et al., 2015a), *COVID-related financial distress* with an adaptation of the Financial Threat Scale (Marjanovic et al., 2013), *loneliness* with the Short loneliness Scale (Gierveld and Tilburg, 2006), *anxiety* and *depression* with the Hospital Anxiety and Depression Scale (Zigmond and Snaith, 1983), and *suicidal thoughts/behaviour* with the Suicidal Behaviors Questionnaire-Revised (SBQ-R; Osman et al., 2001), with questions focussing specifically on the previous 3 months. We also measured control variables at T1: *age*, *gender*, *relationship status* (yes/no), *employment status* (yes/no) and *monthly income after tax*.

### *Data sharing*

Individual de-identified participant data are shared (SPSS data-file, syntax-file, output-file and analysis-memo).

## Results

### *Descriptive statistics and correlations*

Descriptive statistics and partial correlations (controlling for age, gender, T1 relationship status, T1 employment status and T1 income) are in Supplemental Table 1. Supporting predictions, T1 family identification correlated negatively with T2 COVID-related financial distress, ( $p=0.001$ ), T2 loneliness, T2 anxiety, T2 depression and T2 suicidal thoughts/behaviour ( $ps < 0.001$ ). Supporting H1, T2 COVID-related financial distress correlated positively with T2 suicidal thoughts/behaviour ( $p=0.01$ ), T2 loneliness, T2 anxiety and T2 depression ( $ps < 0.001$ ). T2 loneliness also correlated positively with T2 anxiety, T2 depression and T2 suicidal thoughts/behaviour ( $ps < 0.001$ ), while T2 anxiety and T2 depression correlated positively with T2 suicidal thoughts/behaviour ( $ps < 0.001$ ).

### Indirect effects models

See Supplemental Box 2 for an overview of the four models that were tested. To test H2 and H3, three indirect effects analyses were conducted in order to explore the extent to which T1 family identification negatively predicted T2 suicidal thoughts/behaviour via two parallel mediators: T2 COVID-related financial distress and one of the three psychological variables (T2 loneliness, T2 anxiety or T2 depression). For each analysis, we predicted that higher levels of T1 family identification would predict lower levels of T2 COVID-related financial distress, which in turn would predict better T2 mental health (i.e. lower levels of T2 loneliness, T2 anxiety or T2 depression). In turn, we predicted that better T2 mental health would predict lower levels of T2 suicidal thoughts/behaviour. Model 6 in version 3.4 of Hayes' (2017) PROCESS macro was used to test each model. All models involved 5000 bootstrapping samples with 95% confidence intervals (LLCI/ULCI), using the percentile method. Participants' gender, age, T1 relationship status, T1 employment status, T1 income and the T1 versions of any T2 variables in the model were controlled for. Supporting H2 and H3, each model was significant, and can be seen in Supplemental Figures 1 to 3.

Since each of the three individual mediation models was significant, the next step was to include T2 COVID-related financial distress and all three T2 mental health variables (loneliness, anxiety and depression) in a single model. This meant we could explore whether each of the T2 mental health variables continued to significantly predict T2 suicidal thoughts/behaviour when the other T2 mental health variables were controlled for. Model 81 in version 3.4 of Hayes' (2017) PROCESS macro was used, which explores Supplemental Figures 1 to 3 in a single model (see Supplemental Figure 4 for the model).

A significant indirect effect of T1 family identification on T2 suicidal thoughts/behaviour was found through T2 COVID-related financial distress and T2 loneliness (Supplemental Figure 4),  $Effect = -0.005$ ,  $Boot SE = 0.003$ ,  $Boot LLCI = -0.01$ ,  $Boot ULCI = -0.001$ , and through

T2 COVID-related financial distress and T2 depression (although note that the ULCI is zero, indicating that the path has just reached significance and no more),  $Effect = -0.002$ ,  $Boot SE = 0.002$ ,  $Boot LLCI = -0.007$ ,  $Boot ULCI = 0.00$ , but not through T2 COVID-related financial distress and T2 anxiety,  $Effect = -0.002$ ,  $Boot SE = 0.001$ ,  $Boot LLCI = -0.005$ ,  $Boot ULCI = 0.001$ . While T2 COVID-related financial distress significantly predicted all three psychological variables (T2 loneliness, T2 anxiety and T2 depression;  $ps < 0.01$ ), only T2 loneliness and T2 depression were significant predictors of T2 suicidal thoughts/behaviour ( $ps < 0.001$  and  $0.006$ , respectively), while T2 anxiety was not ( $p = 0.21$ ). The total effect of T1 family identification on T2 suicidal thoughts/behaviour was non-significant,  $Effect = 0.04$ ,  $SE = 0.05$ ,  $t = 0.82$ ,  $p = 0.41$ ,  $LLCI = -0.06$ ,  $ULCI = 0.15$ , and this remained non-significant when the mediators were accounted for (i.e. the direct effect), indicating indirect-only mediation (Zhao et al., 2010),  $Effect = 0.07$ ,  $SE = 0.05$ ,  $t = 1.48$ ,  $p = 0.14$ ,  $LLCI = -0.02$ ,  $ULCI = -0.17$ .

### Discussion

The unique combination of health, economic and social impacts resulting from the COVID-19 pandemic has already begun to affect the occurrence of suicidal thought and behaviour (Bryan et al., 2020; Fitzpatrick et al., 2020; Gratz et al., 2020), though the specific impacts of financial hardship remain undetermined. Our survey supported predictions by indicating that COVID-related financial distress predicts a range of negative psychological outcomes: loneliness, anxiety and depression and that these in turn are associated with suicidal thoughts/behaviour. This replicates previous work showing that, across different age groups and in different national contexts, financial stress has a pernicious and corrosive effect on mental health, with potentially fatal effects (Assari, 2018; Fiksenbaum et al., 2017; Wang, 2015).

In addition, we show that financial distress is related to suicidal thoughts/behaviour via these

psychological variables, although only loneliness and depression remain as significant mediators when all are included in a single model. It is thus pertinent to consider why these two variables may be of particular importance. First, in terms of loneliness, our results accord with historic and recent models of suicide which conceptualise social isolation and lack of belonging as key predictors of suicide (Joiner, 2005; O'Connor and Kirtley, 2018). Building on a broad range of evidence pointing to the socially-isolating effects of financial hardship (e.g. Eckhard, 2018; Samuel et al., 2018) our work serves to highlight the potentially multiplicative effects of economic challenge and social isolation on suicide (Assari, 2018). Second, the mediating role played by depression in the relationship between financial distress and suicidal thoughts/behaviour is in line with longstanding evidence of the impacts of financial distress on mental health and the particular role of depression as a predictor of suicide (e.g. Handley et al., 2019; Lee and Chou, 2019).

Following from this (and further supporting our predictions), the results demonstrate that these relationships are indeed attenuated by family group dynamics. Consistent with a range of evidence attesting to the protective qualities of family membership (e.g. Wakefield et al., 2016), family identification is associated with a reduction in mental ill-health and, through this, a reduction in suicidal thoughts/behaviour. Our work replicates that of Stevenson et al. (2020) in showing how family dynamics may serve to reduce financial stress, but also evidences the implications of this attenuation in a more urgent context: as a potentially protective factor against suicidal thoughts/behaviour during an economic recession (Prime et al., 2020).

Of course, there are limitations to the current work. The sample is relatively small and self-selecting, and while it is diverse, it is not representative of the wider UK population. Neither does it capture the effects of the range of economic consequences across different national contexts in which economically vulnerable families will receive either more or less government support; something future research should

explore. Second, our data consists of individual self-reports of family identification rather than the collection of detailed data about family units. Future research would benefit from the greater degree of granularity gained from considering the size and composition of family units on individual's coping ability, while direct observation of how families cope with the challenges of COVID-19 could shed light on the specific aspects of family life which help or hinder financial coping. Third, while the self-report aspect of our study allowed participants to answer questions on a sensitive topic whilst retaining their privacy, self-report measures are of course only a proxy for actual suicidal thoughts/behaviour and mental health.

Nonetheless, this work does provide important preliminary insight into the potential scope and scale of COVID-19's toll on mental health and suicidal thoughts/behaviour, as well as insight into the mechanisms through which these effects might occur, and how they might be attenuated by a sense of identification with one's family. As such, our work has several implications for services charged with the alleviation of financial distress and with suicide prevention. We would note that as with the majority of financial support services, suicide prevention strategies are typically targeted and delivered at the level of the individual. While this is often necessary due to issues of sensitivity and confidentiality (as well as limits on staffing and resources) much is to be gained from considering the potential to engage the household or family unit in efforts to provide resilience to specific threats, such as economic crises. Family-based interventions which aim to highlight the shared experience of members and promote a sense of shared identity should unlock much-needed communication, trust, mutual support and collective efficacy. Such psychological resources should in turn help to both promote collective resilience for the household unit and reduce mental health problems and suicide risk among vulnerable family members. Such strengths-based approaches to financial hardship (e.g. Benzie and Mychasiuk, 2009; Walsh, 1996) are especially pertinent in the current

pandemic, where individuals are isolated from other forms of social or therapeutic support and are required to spend most of their time in the presence of their families. Under such exceptional circumstances, a family 'pulling together' can have a transformative effect on the otherwise isolating and stigmatising consequences of economic hardship.

### Authors' note

Individual de-identified participant data are shared (SPSS data-file, syntax-file, output-file and analysis-memo).

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### Supplemental material

Supplemental material for this article is available online.

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## Suicide COVID data memo

- Data were analysed in SPSS.
- All variables are clearly labelled in the data-file.
- Analysis involved obtaining partial correlations, means, and standard deviations.
- Four mediation/indirect effects analyses were also conducted, using Hayes' SPSS PROCESS macro (three using Model 6, one using Model 81).
- The PROCESS macro can be downloaded from <https://www.processmacro.org/index.html>
- 5000 bootstrap samples were used in all analyses. Percentile method was used.