Financial Distress and Suicidal Behaviour During COVID-19: Family Identification Attenuates the Negative Relationship Between COVID-Related Financial Distress and Mental Ill-Health

Clifford Stevenson & Juliet Ruth Helen Wakefield*

Department of Psychology, Nottingham Trent University, UK.

*Corresponding author information: Juliet R. H. Wakefield, Department of Psychology, Nottingham Trent University, 50 Shakespeare Street, Nottingham, NG1 4FQ. Email: juliet.wakefield@ntu.ac.uk

Words: 5878

The authors have no competing interests to declare. Individual de-identified participant data are shared (SPSS data-file, syntax-file, output-file, and analysis-memo).

The research was conducted with funding from the authors' institution and funding from the BPS Social Psychology Section's Pump Priming Scheme.

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-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; suicide; social cure

Introduction

The COVID-19 pandemic has been characterized as a 'perfect storm' of risk factors for suicide (Reger, Stanley & Joiner, 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, Pirkis, Gunnel, Appelby & Morrissey, 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, Harris, & Drawve, 2020). Looking specifically at areas affected by social distancing measures, Bryan, Bryan, and Baker (2020) found associations 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, Ghosn, Jougla & Rey, 2015; Matsubayashi, Sekijima, & Ueda, 2020; Sinyor, Tse, & Pirkis, 2017). This has commonly been attributed to a number of specific outcomes of recessions which impact individuals' lives: increased unemployment and job insecurity (Kawohl & 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, Gladden, Vagi, Barnes, & Frazier, 2015). These effects are noted to be particularly impactful on groups that are already economically and psychologically vulnerable (e.g., Ntoutoulaki 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'Conner & 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, Marjanovic, Greenglass, & Garcia-Santos, 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, Conwell, Conner, Eberly, & Caine, 2004; Fagg, Curtis, Stansfeld, & Congdon, 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 & Rudd, 1995), and family financial stress in particular is known to erode family members' mental health (Conger et al., 2002; Prime, Wade, & Browne, 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 & 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, Alkire, Zavaleta, Mills, & Hammock, 2018; Starrin, Åslund, & Nilsson, 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, Jetten, Cruwys, Dingle, & Haslam, 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, Bowe, Kellezi, McNamara, & Stevenson, 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, Madhok, Norbury, Dugard, & Wakefield, 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, Jetten, Haslam, Cruwys, & Haslam, 2016; Iyer, Jetten, Tsivrikos, Postmes, & Haslam, 2009). Additionally, belonging to social groups can protect against loneliness (e.g., Kellezi, Wakefield, Stevenson et al., 2020). 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, & Cacioppo, 2018).

Moreover, a range of studies have shown that group memberships can provide resilience to economic threats. For example, McNamara, Stevenson, and Muldoon (2013) showed how deprived communities provide their members with the psychological resources needed to deal with the challenges of economic marginalisation, while Fong, Cruwys, Haslam, and Haslam (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, Jay, McNamara, Stevenson & Muldoon, 2016). Stevenson, Costa, Wakefield, Kellezi, and Stack (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 zero-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 two 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 & 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 = .16), COVID-related financial distress (p = .57), loneliness (p = .22), anxiety (p = .75), depression (p = .93), suicidal thoughts/behaviours (p = .28), age (p = .24), or income (p = .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 Supplementary 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, Greenglass, Fiskenbaum, & Bell, 2013), *loneliness* with the Short loneliness Scale (Gierveld & Tilburg, 2006), *anxiety* and *depression* with the Hospital Anxiety and Depression Scale (Zigmond & 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 three 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 Supplementary Table 1. Supporting predictions, T1 family identification correlated negatively with T2 COVID-related financial distress, (p = .001), T2 loneliness, T2 anxiety, T2 depression, and T2 suicidal thoughts/behaviour (ps < .001). Supporting H1, T2 COVID-related financial distress correlated positively with T2 suicidal thoughts/behaviour (p = .01), T2 loneliness, T2 anxiety, and T2 depression (ps < .001). T2 loneliness also correlated positively with T2 anxiety, T2 depression, and T2 suicidal thoughts/behaviour (ps < .001), while T2 anxiety and T2 depression correlated positively with T2 suicidal thoughts/behaviour (ps < .001).

Indirect Effects Models

See Supplementary 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 5,000 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 Supplementary Figures 1-3.

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 Supplementary Figures 1-3 in a single model (see Supplementary 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 (Supplementary Figure 4), *Effect* = -.005 *Boot SE* = .003, *Boot LLCI* = -.01, *Boot ULCI* = -.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* = -.002, *Boot SE* = .002, *Boot LLCI* = -.007, *Boot ULCI* = .00, but not through T2 COVID-related financial distress and T2 anxiety, *Effect* = -.002, *Boot SE* = .001, *Boot LLCI* = -.005, *Boot ULCI* = .001. While T2 COVID-related financial distress significantly predicted all three psychological variables (T2 loneliness, T2 anxiety, and T2 depression; *p*s < .01), only T2 loneliness and T2 depression were significant predictors of T2 suicidal thoughts/behaviour (*p*s < .001 and .006 respectively), while T2 anxiety was not (*p* = .21). The total effect of T1 family identification on T2 suicidal thoughts/behaviour was non-significant, *Effect* = .04, *SE* = .05, *t* = 0.82, *p* = .41, *LLCI* = -.06, *ULCI* = .15, and this remained non-significant when the mediators were accounted for (i.e., the direct effect), indicating indirect-only mediation (Zhao, Lynch, & Chen, 2010), *Effect* = .07, *SE* = .05, *t* = 1.48, *p* = .14, *LLCI* = -.02, *ULCI* = -.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 & 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, Rich, Lewin & Kelly, 2019; Lee & Chou, 2018).

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, Sani, Herrera, Khan, & Dugard, 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., Benzies & Mychasiuk, 2008; Walsh, 1996) are especially pertinent in the current pandemic, where individuals are isolated form 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.

References

Almeida, O. P., Draper, B., Snowdon, J., Lautenschlager, N. T., Pirkis, J., Byrne, G., ... & Pfaff, J. J. (2012). Factors associated with suicidal thoughts in a large community study of older adults. *The British Journal of Psychiatry*, *201*(6), 466-472. Doi: 10.1192/bjp.bp.112.110130

Assari, S. (2018). Suicide attempts in Michigan HealthCare System; Racial differences. *Brain Sciences*, *8*(7), 124. Doi: 10.3390/brainsci8070124.

Benzies, K., & Mychasiuk, R. (2009). Fostering family resiliency: A review of the key protective factors. *Child & Family Social Work*, *14*(1), 103-114. Doi: 10.1111/j.1365-2206.2008.00586.x

Bradshaw, D., Jay, S., McNamara, N., Stevenson, C., & Muldoon, O. T. (2016). Perceived discrimination amongst young people in socio-economically disadvantaged communities: Parental support and community identity buffer (some) negative impacts of stigma. *British Journal of Developmental Psychology*, *34*(2), 153-168. Doi: 10.1111/bjdp.12120.

Bryan, C., Bryan, A. O., & Baker, J. C. (2020). Associations among state-level physical distancing measures and suicidal thoughts and behaviors among US adults during the early COVID-19 pandemic. *Suicide and Life-Threatening Behavior*. Doi: 10.1111/sltb.12653.

Cacioppo, J. T., & Cacioppo, S. (2018). Loneliness in the modern age: An evolutionary theory of loneliness (ETL). *Advances in Experimental Social Psychology*, *58*, 127–197. Doi: 10.1016/bs.aesp.2018.03.003.

Citizens' Advice Bureau (2020a). Ensuring people do not fall through the gaps in the government's employment support schemes. Retrieved from: https://www.citizensadvice.org.uk/about-us/policy/policy-research-topics/welfare-policy-

research-surveys-and-consultation-responses/welfare-policy-research/ensuring-people-do-not-fall-through-the-gaps-in-the-governments-employment-support-schemes/

Citizens' Advice Bureau (2020b). When the protection schemes end: A transition package to help households recover from the coronavirus shock. Retrieved from: https://www.citizensadvice.org.uk/about-us/policy/policy-research-topics/welfare-policy-research-surveys-and-consultation-responses/welfare-policy-research/when-the-protection-schemes-end-a-transition-package-to-help-households-recover-from-the-coronavirus-shock/

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, *24*, 386-396. Doi: 10.2307/2136404.

Conger, R. D., Wallace, L. E., Sun, Y., Simons, R. L., McLoyd, V. C., & Brody, G. H. (2002). Economic pressure in African American families: a replication and extension of the family stress model. *Developmental Psychology*, *38*(2), 179-193. Doi: 10.1037/0012-1649.38.2.179.

Coope, C., Donovan, J., Wilson, C., Barnes, M., Metcalfe, C., Hollingworth, W., ... & Gunnell, D. (2015). Characteristics of people dying by suicide after job loss, financial difficulties and other economic stressors during a period of recession (2010–2011): A review of coroners′ records. *Journal of Affective Disorders, 183*, 98-105. Doi: 10.1016/j.jad.2015.04.045.

Duberstein, P. R., Conwell, Y., Conner, K. R., Eberly, S., & Caine, E. D. (2004). Suicide at 50 years of age and older: perceived physical illness, family discord and financial strain. *Psychological Medicine, 34*(1), 137-146. Doi: 10.1017/S0033291703008584.

Eckhard, J. (2018). Does poverty increase the risk of social isolation? Insights based on panel data from Germany. *The Sociological Quarterly*, *59*(2), 338-359. Doi: 10.1080/00380253.2018.1436943.

Elbogen, E. B., Lanier, M., Montgomery, A. E., Strickland, S., Wagner, H. R., & Tsai, J. (2020). Financial strain and suicide attempts in a nationally representative sample of US adults. *American Journal of Epidemiology*, *189*(11), 1266-1274. Doi: 10.1093/aje/kwaa146

Fagg, J., Curtis, S., Stansfeld, S., & Congdon, P. (2006). Psychological distress among adolescents, and its relationship to individual, family and area characteristics in East London. *Social Science & Medicine*, *63*(3), 636-648. Doi: 10.1016/j.socscimed.2006.02.012.

Fiksenbaum, L., Marjanovic, Z., Greenglass, E., & Garcia-Santos, F. (2017). Impact of economic hardship and financial threat on suicide ideation and confusion. *The Journal of Psychology*, *151*(5), 477-495. Doi: 10.1080/00223980.2017.1335686.

Fitzpatrick, K. M., Harris, C., & Drawve, G. (2020). How bad is it? Suicidality in the Middle of the COVID-19 Pandemic. *Suicide and Life-Threatening Behavior*. Doi: 10.1111/sltb.12655.

Fong, P., Cruwys, T., Haslam, C., & Haslam, S. A. (2019). Neighbourhood identification and mental health: How social identification moderates the relationship between socioeconomic disadvantage and health. *Journal of Environmental Psychology*, *61*, 101-114. Doi: 10.1016/j.jenvp.2018.12.006.

Fowler, K. A., Gladden, R. M., Vagi, K. J., Barnes, J., & Frazier, L. (2015). Increase in suicides associated with home eviction and foreclosure during the US housing crisis: Findings from 16 national violent death reporting system states, 2005–2010. *American Journal of Public Health*, *105*(2), 311-316. Doi: 10.2105/AJPH.2014.301945.

Giddens, A. (1965). The suicide problem in French sociology. *The British Journal of Sociology*, *16*(1), 3-18. Doi: 10.2307/588563.

Gierveld, J. D. J., & Tilburg, T. V. (2006). A 6-item scale for overall, emotional, and social loneliness: Confirmatory tests on survey data. *Research on Aging*, *28*(5), 582-598. Doi: 10.1177/0164027506289723.

Gratz, K. L., Tull, M. T., Richmond, J. R., Edmonds, K. A., Scamaldo, K., & Rose, J. P. (2020). Thwarted belongingness and perceived burdensomeness explain the associations of COVID-19 social and economic consequences to suicide risk. *Suicide and Life-Threatening Behavior*. Doi: 10.1111/sltb.12654.

Handley, T. E., Rich, J., Lewin, T. J., & Kelly, B. J. (2019). The predictors of depression in a longitudinal cohort of community dwelling rural adults in Australia. *Social Psychiatry and Psychiatric Epidemiology*, *54*(2), 171-180. Doi: 10.1007/s00127-018-1591-1

Haslam, C., Jetten, J., Cruwys, T., Dingle, G., & Haslam, S. A. (2018). *The new psychology of health: Unlocking the social cure*. London: Routledge.

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford Press.

Iyer, A., Jetten, J., Tsivrikos, D., Postmes, T., & Haslam, S. A. (2009). The more (and the more compatible) the merrier: Multiple group memberships and identity compatibility as predictors of adjustment after life transitions. *British Journal of Social Psychology*, *48*(4), 707-733. Doi: 10.1348/014466608X397628.

John, A., Pirkis, J., Gunnell, D., Appleby, L., & Morrissey, J. (2020). Trends in suicide during the covid-19 pandemic. *BMJ*, 371(m4352). Doi:10.1136/bmj.m4352

Joiner, T. E. (2005). *Why people die by suicide*. Cambridge, MA: Harvard University Press.

Joiner T. E., & Rudd, M. D. (1995). Negative attributional style for interpersonal events and the occurrence of severe interpersonal disruptions as predictors of self-reported suicidal ideation. *Suicide and Life-Threatening Behavior*, *25*(2), 297-304. Doi: 10.1111/j.1943-278X.1995.tb00927.x.

Kellezi, B., Wakefield, J. R. H., Stevenson, C., McNamara, N., Mair, E., Bowe, M., ... & Halder, M. M. (2019). The social cure of social prescribing: a mixed-methods study on the benefits of social connectedness on quality and effectiveness of care provision. *BMJ Open*, *9*(11), e033137.

Laanani, M., Ghosn, W., Jougla, E., & Rey, G. (2015). Impact of unemployment variations on suicide mortality in Western European countries (2000–2010). *Journal of Epidemiology & Community Health*, *69*(2), 103-109. Doi: 10.1136/jech-2013-203624.

Lee, S. Y., & Chou, K. L. (2019). Assessing the relative contribution of social exclusion, income-poverty, and financial strain on depressive symptoms among older people in Hong Kong. *Aging & Mental Health*, *23*(11), 1487-1495. Doi: 10.1080/13607863.2018.1506740

Marjanovic, Z., Greenglass, E. R., Fiksenbaum, L., & Bell, C. M. (2013). Psychometric evaluation of the Financial Threat Scale (FTS) in the context of the great recession. *Journal of Economic Psychology, 36*, 1-10. Doi: 10.1016/j.joep.2013.02.005.

Matsubayashi, T., Sekijima, K., & Ueda, M. (2020). Government spending, recession, and suicide: evidence from Japan. *BMC Public Health, 20*(1), 1-8. Doi: 10.1186/s12889-020-8264-1.

McNamara, N., Stevenson, C., & Muldoon, O. T. (2013). Community identity as resource and context: A mixed method investigation of coping and collective action in a disadvantaged community. *European Journal of Social Psychology, 43*(5), 393-403. Doi: 10.1002/ejsp.1953.

Ntountoulaki, E., Paika, V., Papaioannou, D., Guthrie, E., Kotsis, K., Fountoulakis, K. N., ... & Hyphantis, T. (2017). The relationship of the perceived impact of the current Greek recession with increased suicide risk is moderated by mental illness in patients with long-term conditions. *Journal of Psychosomatic Research*, *96*, 98-105. Doi: 10.1016/j.jpsychores.2017.03.008.

O'Connor, R.C. & Kirtley, O.J. (2018). The Integrated Motivational-Volitional Model of Suicidal Behaviour. *Philosophical Transactions of the Royal Society B, 373*, 20170268. Doi: 10.1098/rstb.2017.0268.

ONS (2020). Coronavirus and loneliness, Great Britain: 3 April to 3 May 2020. Retrieved from: https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/bulletins/coronavirusandlonelinessgreatbritain/3aprilto3may2020

Osman, A., Bagge, C. L., Gutierrez, P. M., Konick, L. C., Kopper, B. A., & Barrios, F. X. (2001). The Suicidal Behaviors Questionnaire-Revised (SBQ-R): validation with clinical and nonclinical samples. *Assessment*, *8*(4), 443-454. Doi: 10.1177/107319110100800409.

Prime, H., Wade, M., & Browne, D. T. (2020). Risk and resilience in family well-being during the COVID-19 pandemic. *American Psychologist*. Doi: 10.1037/amp0000660.

Reger, M. A., Stanley, I. H., & Joiner, T. E. (2020). Suicide mortality and coronavirus disease 2019-A perfect storm?. *JAMA Psychiatry*. Doi: 10.1001/jamapsychiatry.2020.1060.

Resolution Foundation (2020a, April 14). UK on course for deepest recession in three centuries and highest borrowing since the war. Retrieved from: https://www.resolutionfoundation.org/press-releases/uk-on-course-for-deepest-recession-in-three-centuries-and-highest-borrowing-since-the-war/

Resolution Foundation (2020b, May 27) This time is different - Universal Credit's first recession. Retrieved from: https://www.resolutionfoundation.org/publications/this-time-is-different-universal-credits-first-recession/

Samuel, K., Alkire, S., Zavaleta, D., Mills, C., & Hammock, J. (2018). Social isolation and its relationship to multidimensional poverty. *Oxford Development Studies*, *46*(1), 83-97. Doi: 10.1080/13600818.2017.1311852.

Sani, F., Madhok, V., Norbury, M., Dugard, P., & Wakefield, J. R. (2015a). Greater number of group identifications is associated with healthier behaviour: evidence from a Scottish community sample. *British Journal of Health Psychology*, *20*(3), 466-481. Doi: 10.1111/bjhp.12119.

Sani, F., Madhok, V., Norbury, M., Dugard, P., & Wakefield, J. R. (2015b). Greater number of group identifications is associated with lower odds of being depressed: evidence from a Scottish community sample. *Social Psychiatry and Psychiatric Epidemiology*, *50*(9), 1389-1397. Doi: 10.1007/s00127-015-1076-4.

Sinyor, M., Tse, R., & Pirkis, J. (2017). Global trends in suicide epidemiology. *Current Opinion in Psychiatry*, *30*(1), 1-6. Doi: 10.1097/YCO.0000000000000296.

Stevenson, C., Costa, S., Wakefield, J. R, Kellezi, B., & Stack, R. (2020). Family identification facilitates coping with financial stress: A social identity approach to family

financial resilience. *Journal of Economic Psychology*, 102271. Doi: 10.1016/j.joep.2020.102271.

Starrin, B., Åslund, C., & Nilsson, K. W. (2009). Financial stress, shaming experiences and psychosocial ill-health: studies into the finances-shame model. *Social Indicators Research*, *91*(2), 283-298. Doi: 10.1007/s11205-008-9286-8.

Steffens, N. K., Jetten, J., Haslam, C., Cruwys, T., & Haslam, S. A. (2016). Multiple social identities enhance health post-retirement because they are a basis for giving social support. *Frontiers in Psychology*, *7*, 1519. Doi: 10.3389/fpsyg.2016.01519.

Stravynski, A., & Boyer, R. (2001). Loneliness in relation to suicide ideation and parasuicide: A population-wide study. *Suicide and Life-Threatening Behavior*, *31*(1), 32-40. Doi: 10.1521/suli.31.1.32.21312.

Trussell Trust (2020, May 1st). Food banks report record spike in need as coalition of anti-poverty charities call for strong lifeline to be thrown to anyone who needs it. Retrieved from: https://www.trusselltrust.org/2020/05/01/coalition-call/

Wakefield, J. R., Bowe, M., Kellezi, B., McNamara, N., & Stevenson, C. (2019). When groups help and when groups harm: Origins, developments, and future directions of the "Social Cure" perspective of group dynamics. *Social and Personality Psychology Compass, 13*(3), e12440. Doi: 10.1111/spc3.12440.

Wakefield, J. R., Sani, F., Herrera, M., Khan, S. S., & Dugard, P. (2016). Greater family identification—but not greater contact with family members—leads to better health: Evidence from a Spanish longitudinal study. *European Journal of Social Psychology*, *46*(4), 506-513. Doi: 10.1002/ejsp.2171.

Walsh, F. (1996). The concept of family resilience: Crisis and challenge. *Family Process*, *35*, 261-281. Doi: 10.1111/j.1545-5300.1996.00261.x

Wang, Y., Sareen, J., Afifi, T. O., Bolton, S. L., Johnson, E. A., & Bolton, J. M. (2015). A population-based longitudinal study of recent stressful life events as risk factors for suicidal behavior in major depressive disorder. *Archives of Suicide Research*, *19*(2), 202-217. Doi: 10.1080/13811118.2014.957448.

Wang, Z., & Tang, K. (2020). Combating COVID-19: Health equity matters. *Nature Medicine*, *26*(4), 458-458. Doi: 10.1038/s41591-020-0823-6.

Zhao, X., Lynch Jr, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, *37*(2), 197-206. Doi: 10.1086/651257.

Zigmond, A. S., & Snaith, R. P. (1983). The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica, 67*(6), 361-370. Doi: 10.1111/j.1600-0447.1983.tb09716.x.

Supplementary Table 1

Descriptive statistics, including means (M) and standard deviations (SD), and partial correlations (controlling for age, gender, T1 relationship status, T1 employment status, and T1 income)

	1	2	3	4	5	6	7	8	9	10	11	12
1.Family Identification T1	-											
(1-7, *M* = 5.13, *SD* = 1.87)												
2.COVID Financial Distress T1	-.05	-										
(1-5, *M* = 2.57, *SD* = 1.13)												
3.Loneliness T1	-.39***	.20***	-									
(1-7, *M* = 3.58, *SD* = 1.54)												
4. Anxiety T1	-.26***	.28***	.57***	-								
(0-3; *M* = 1.18, *SD* = 0.66)												
5. Depression T1	-.31***	.30***	.64***	.66***	-							
(0-3; *M* = 0.94, *SD* = 0.65)												
6.Suicidal Behaviour T1	-.31***	.11*	.53***	.42***	.44***	-						
(3-18; *M* = 5.14, *SD* = 2.92)												
7.Family Identification T2	.48***	-.07	-.34***	-.23***	-.31***	-.26***	-					
(1-7, *M* = 5.02, *SD* = 1.92)												
8.COVID Financial Distress T2	-.18***	.66***	.25***	.26***	.28***	.09†	-.13*	-				
(1-5, *M* = 2.44, *SD* = 1.14)												
9.Loneliness T2	-.36***	.23***	.83***	.52***	.59***	.50***	-.37***	.33***	-			
(1-7, *M* = 3.62, *SD* = 1.60)												

10. Anxiety T2	-.22***	.24***	.55***	.73***	.55***	.42***	-.25***	.32***	.61***	-		
(0-3; *M* = 1.16, *SD* = 0.68)												
11. Depression T2	-.34***	.23***	.64***	.52***	.74***	.44***	-.41***	.30***	.69***	.64***	-	
(0-3; *M* = 0.87, *SD* = 0.64)												
12.Suicidal Behaviour T2	-.26***	.10†	.52***	.40***	.42***	.84***	-.28***	.14**	.57***	.47***	.51***	-
(3-18; *M* = 5.17, *SD* = 3.00)												

*** $p \leq .001$, ** $p \leq .01$, † $p < .10$

Supplementary Box 1

Information about Measures

Family identification was measured with Sani et al.'s (2015a) four-item Group Identification Scale. This scale has been used in previous Social Cure studies (e.g., Wakefield et al., 2020) and taps the key topics of perceived belonging to one's group and sense of commonality with one's fellow group members. Participants rated their agreement with each statement (e.g., "I feel a bond with my family") on a scale ranging from 1 ("I strongly disagree") to 7 ("I strongly agree"). Participants were asked to define 'family' in any way that was meaningful for them (e.g., nuclear family, extended family, etc.) The mean of the items was found, with higher values indicating higher family identification (T1 $\alpha = .93$, T2 $\alpha = .94$). Participants who stated that they did not have a family (T1 $n = 36$, T2 $n = 41$) were given the value of 1 ("I strongly disagree") for the overall mean item.

COVID-related financial distress was measured with an adaptation of the five-item version of Marjanovic, Greenglass, Fiskenbaum, and Bell's (2013) Financial Threat Scale, which is a widely-used measure of financial distress. We asked participants to think about the extent to which the pandemic had affected their finances over the past three months, and rate each item (e.g., "How uncertain do you feel about your finances because of corona virus?") on a 1-5 scale ("Not at all" – "To a very great extent"). The mean of the items was found, with higher values indicating higher distress (T1 $\alpha = .96$, T2 $\alpha = .97$).

Loneliness was measured with Gierveld and Tilburg's (2006) six-item Short Loneliness Scale, which is an extensively used loneliness measure. Participants rated their agreement with each item (e.g., "I experience a general sense of emptiness") on a scale ranging from 1 ("I

strongly disagree") to 7 ("I strongly disagree"). We chose to remove one item ("I miss having people around"), as we found it to load on a separate factor when we conducted a factor analysis on the scale (most likely because 'having people around' takes on a new negative meaning in a pandemic). The mean of the five items was found, with higher values indicating higher levels of loneliness (T1 $\alpha = .88$, T2 $\alpha = .89$).

Anxiety and *depression* symptomology were measured with the fourteen-item Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983). This is a well-known and widely-used measure of depression and anxiety, suitable for use with non-clinical populations. Participants were asked to think about the last week, and to rate the frequency with which they had experienced each of the seven anxiety symptoms (e.g., "I feel tense or wound up") and each of the seven depression symptoms (e.g., "I feel as if I am slowed down") on an item-specific scale ranging from 0 to 3. The mean of the anxiety items and the mean of the depression items were found, with higher values indicating stronger symptoms (Anxiety: T1 $\alpha = .87$, T2 $\alpha = .88$; Depression: T1 $\alpha = .86$, T2 $\alpha = .86$).

Suicidal thoughts/behaviour was measured with the four-item Suicidal Behaviors Questionnaire-Revised (SBQ-R; Osman et al., 2001), with items worded to focus on the previous three months (i.e., for the first wave, since the pandemic's start). This is a well-known and widely-used measure of suicidal thoughts/behaviour. Participants rated their agreement with each item ("During the past three months, have you ever thought about or attempted to kill yourself?"; "How often have you thought about killing yourself in the past three months?"; "During the past three months, have you ever told someone that you were going to commit suicide, or that you might do it?"; "How likely is it that you will attempt suicide someday?") on an item-specific scale (e.g., Never/Rarely (1 time)/Sometimes (2 times)/Often (3-4 times)/Very Often (5 or more

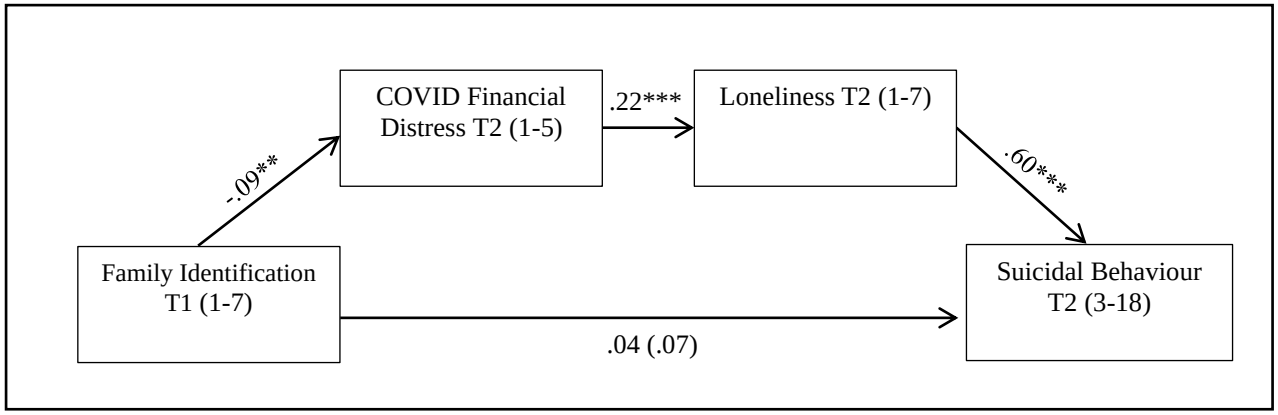
times). Participants' scores were summed in the manner recommended by the scale's authors, creating a suicidal behaviour scale ranging between 3 and 18, where higher values indicate higher levels of suicidal behaviour (T1 $\alpha = .77$, T2 $\alpha = .77$).

Finally, *demographic information* was gathered. This included participants' *age*, *gender*, whether the participant was *in a relationship* ('relationship' was defined as being married or in a domestic partnership), whether the participant was in *employment*, their *monthly income after tax* (0 = "Nil or loss" – 10 = "£4000 or more"). These income categories were derived from the 2007 UK Census.

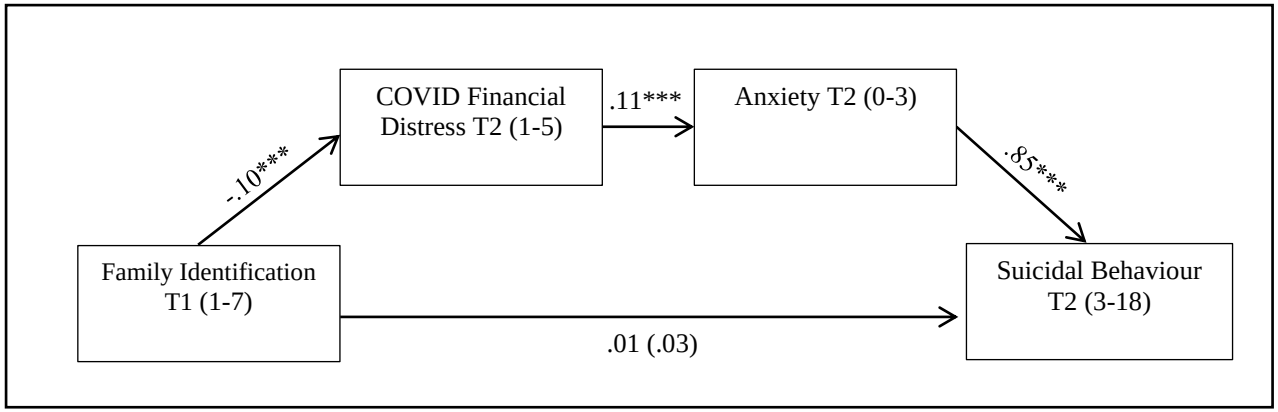
Supplementary Box 2

Summary of Mediation Models Tested

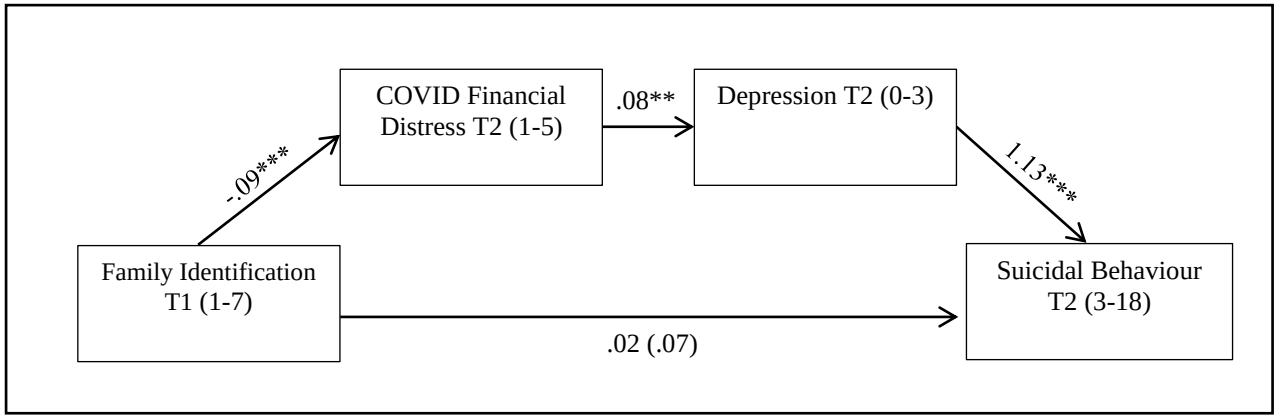
Four separate models were tested. Model one explored the extent to which T1 family identification negatively predicted T2 suicidal thoughts/behaviour via T2 COVID-related financial distress and T2 loneliness (parallel mediators). Model two explored the extent to which T1 family identification negatively predicted T2 suicidal thoughts/behaviour via T2 COVID-related financial distress and T2 anxiety (parallel mediators). Model three explored the extent to which T1 family identification negatively predicted T2 suicidal thoughts/behaviour via T2 COVID-related financial distress and T2 depression (parallel mediators). Model four explored the extent to which T1 family identification negatively predicted T2 suicidal thoughts/behaviour, first via T2 COVID-related financial distress (parallel mediator), and then via T2 loneliness, T2 anxiety, and T2 depression (serial mediators).



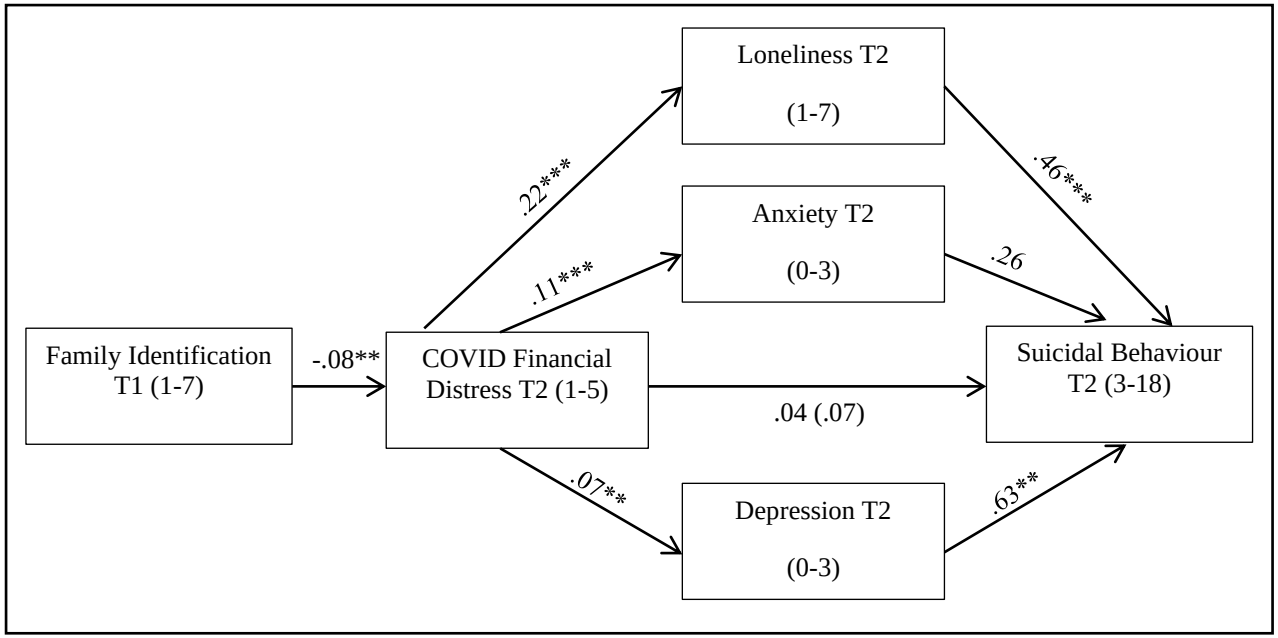
Supplementary Figure 1. Longitudinal indirect effect model featuring loneliness. Note that although age, gender, T1 relationship status, T1 employment status, T1 income, T1 COVID-related financial distress, T1 loneliness, and T1 suicidal thoughts/behaviour were included as control variables, they are not shown. On the *c* path, the variable outside brackets in the total effect, while the variable inside brackets is the direct effect.*** $p < .001$, ** $p < .01$.



Supplementary Figure 2. Longitudinal indirect effect model featuring anxiety. Note that although age, gender, T1 relationship status, T1 employment status, T1 income, T1 COVID-related financial distress, T1 anxiety, and T1 suicidal thoughts/behaviour were included as control variables, they are not shown. On the *c* path, the variable outside brackets in the total effect, while the variable inside brackets is the direct effect.*** $p < .001$.



Supplementary Figure 3. Longitudinal indirect effect model featuring depression. Note that although age, gender, T1 relationship status, T1 employment status, T1 income, T1 COVID-related financial distress, T1 depression, and T1 suicidal thoughts/behaviour were included as control variables, they are not shown. On the *c* path, the variable outside brackets in the total effect, while the variable inside brackets is the direct effect.*** $p < .001$, ** $p < .01$.



Supplementary Figure 4. Longitudinal indirect effects model featuring all mediators. Note that although age, gender, T1 relationship status, T1 employment status, T1 income, T1 COVID-related financial distress, T1 loneliness, T1 anxiety, T1 depression, and T1 suicidal thoughts/behaviour were included as control variables, they are not shown. On the *c* path, the variable outside brackets in the total effect, while the variable inside brackets is the direct effect.*** $p < .001$, ** $p < .01$.