The Matter of Mattering: The Impact of Mattering on Depression and Suicide

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Abstract

In light of the COVID-19 pandemic, we wanted to answer the question of why being or feeling alone can contribute to depression or suicidal ideation. One possible answer, according to our study, is that loneliness often leads people to feel that they do not matter, thus distorting an essential component of human mental health. We therefore hypothesized that mattering would mediate the relationships between loneliness and depression (H1), as well as loneliness and suicidality (H2). Study 1, which tested H1, was a secondary analysis of longitudinal data on mental health outcomes during the COVID-19 pandemic. Study 2 tested H2 using cross-sectional samples of college students and nationwide adults. In Study 2, we additionally hoped to discern the impact of different types of perceived mattering (i.e., mattering to close others, like family and friends, versus mattering to one's community) on depression and suicide. H1 was supported and H2 was partially supported. In Study 1, mattering mediated the relationship between loneliness and depression. In Study 2, context-free mattering mediated the relationship between loneliness and suicidality. We also found evidence of indirect effects of community mattering on suicidality in both samples and direct effects of close mattering on suicidality in nationwide adults. However, we found no evidence of a direct effect of community mattering on suicidality. Our results therefore provide support that mattering can have a direct impact on mental health outcomes and suggest that mattering could be targeted as a protective factor for depression and suicide in future interventions.

The Matter of Mattering: The Impact of Mattering on Depression and Suicide

Rosenberg and McCullough (1981) originally defined *mattering* as the perception of being an "object of interest and importance" to significant others (Rosenberg & McCullough, 1981). Although this topic emerged in the previous century, the field remains largely understudied at present. However, in a time of unparalleled physical isolation and social distancing as a result of the COVID-19 pandemic, understanding the consequences of mattering (or not) is more critical than ever. In June of 2020, the Centers for Disease Control reported that general levels of anxiety, depression, suicidal ideation, and substance use in the United States were more than three times higher than reports recorded in June of 2019 (Czeisler et al., 2020). Findings from the National Center for Health Statistics corroborated the C.D.C.'s report, as they cited that between April and June of 2020, about one third of Americans matched diagnostic criteria for clinical anxiety and depression (NCHS, 2020). This paper argues that the Coronavirus pandemic caused a national crisis of mattering, and that mattering is the key construct in explaining the unprecedented levels of widespread psychopathology at the virus's peak. Thus, we hypothesized that low perceptions of mattering as a result of social isolation during quarantine drastically compounded negative mental health outcomes. By eliminating many instances for social interaction, the circumstances brought on by the virus likely instilled feelings of powerlessness, unimportance, and insignificance in the general public. It is therefore essential to evaluate mattering's role in understanding the effects of the pandemic on mental health.

The Foundations of Mattering

Almost a century before researchers established mattering as a formal psychological construct, early social scientists started hinting that feeling significant to others has a

critical impact on the human psyche. William James (1890) proposed that, in the most basic sense, being noticed by others comprises the foundation of human wellbeing. This idea inspired Rosenberg and McCullough's (1981) definition of mattering as being an "object of interest and importance" to significant others. It is important to note that while mattering can take on many different forms, this pair focused on mattering to significant others, and that social mattering is just one subtype of general mattering. They argued that this particular type of mattering is composed of three elements: the feeling that an individual is an object of their significant others' attention, that they are important to their significant others, and that their significant others depend upon them. It is also important to note that this paper will distinguish between *interpersonal mattering*, which encapsulates Rosenberg and McCullough's (1981) definition of mattering to specific others, and *general mattering*, which embodies a person's overarching and context-free sense of mattering (Fromm, 2013).

Rosenberg and McCullough's study piqued scientific curiosity and spurred a wave of mattering research to further investigate how mattering impacts wellbeing. For example, Schlossberg expanded upon Rosenberg's definition of mattering by incorporating Cooley's (1912) idea of the looking glass self, or the tendency for individuals to evaluate themselves through the eyes of others to determine their relative social significance. While Rosenberg and McCullough touched on this concept, this paper solidified the term *perceived mattering*, or the idea that mattering is a subjective, personal, and biased experience (Schlossberg, 1989). These seminal works created the foundation and terminology for modern mattering research and set the stage for future investigators to continue to explore mattering's impact on well-being and mental health outcomes.

The Mattering Experience

The perception of mattering has a myriad of positive consequences across various domains of the human experience. Generally speaking, mattering is positively associated with feelings of belongingness (Baumeister & Leary, 1995) and self-esteem (Rosenberg & McCullough, 1981) and is negatively associated with depression (Rosenberg & McCullough, 1981) and feelings of marginality, or the feeling of not fitting in (Schlossberg, 1989). Demir and colleagues (2011) found that mean levels of both friendship quality and friendship happiness are highest when individuals feel they matter to their best friend, or even a group of their three closest friends. A similar study found that mattering is associated with higher relationship contentment and investment in young adults' romantic relationships (Mak & Marshall, 2004). Adolescents who feel they matter are also less likely to act out (Rosenberg & McCullough, 1981). Additionally, in a sample of college students, mattering to friends, family, and a university was negatively associated with academic stress (Dixon Rayle & Chung, 2007).

Over the past few decades, researchers have identified several key demographic patterns regarding perceived level of mattering. Younger children and middle-aged adults experience the highest mean levels of mattering, while levels of perceived mattering for adolescents and seniors taper (Rosenberg & McCullough, 1981). Furthermore, higher socioeconomic status, being an only child (Rosenberg & McCullough, 1981), working in a challenging or fulfilling job, and having children (Schieman & Taylor, 2001) are also all positively associated with perceived mattering. The current literature also suggests that gender may play a role in determining how people develop and respond to their sense of perceived mattering, but more research is needed to clarify this relationship (Dixon Rayle, 2005; Dixon Rayle & Chung, 2007; Dixon Rayle et al., 2009; Marshall, 2001; Marshall et al., 2010; Schieman & Taylor, 2001; Taylor & Turner, 2001).

The Relationship Between Loneliness, Mattering, and Depression

Mattering's impact on depression is still largely understudied and unclear. Yet, this paper maintains the assertion that mattering is a significant and independent predictor of depression. On the other hand, it is well known that mattering has an inverse relationship with loneliness where high levels the former lead to low levels of the latter and vice versa (Flett et al., 2016). Cacioppo & Cacioppo (2014) even found that extended periods of loneliness may contribute to increased mortality in older adults as it was associated with poorer executive functioning, impaired sleep, and decreased physical and mental health. While studies evaluating mattering and loneliness have found robust negative correlations between the two constructs (Flett et al., 2016; Francis, 2018), no studies to our knowledge have evaluated all three measures of loneliness, mattering, and depression together.

In their original study, Rosenberg and McCullough (1981) argued that while mattering impacts self-esteem which can in turn impact depression, mattering itself can directly account for variances in levels of depression. Various other studies have confirmed that even after controlling for other risk and protective factors and possible interaction effects, mattering remains an independent predictor of depression (Milner et al., 2016; Taylor & Turner, 2001). However, recent studies have de-emphasized mattering's direct impact on mental health outcomes. For example, researchers operationalize meaning in life (MIL) with a tripartite model where comprehension, purpose, and mattering are subconstructs that determine a person's overall MIL (Heintzelman & King, 2014; Martela & Steger, 2016; Steger, 2012). (Further examples of researchers discounting mattering's direct and independent effect on mental health outcomes will be elaborated upon in the section discussing mattering's relationship to suicidality).

Thus, the principal aims for Study 1 were to integrate measures of social disconnection (loneliness) into the mattering and depression literature and to demonstrate that mattering can directly account for significant variance in depressive symptoms. For Study 1 we used an archival dataset to test the hypothesis that mattering would mediate the relationship between loneliness and depression. We proposed that loneliness would be associated with depression in part because it leads individuals to feel they do not matter. The pre-registration for Study 1 can be found at the following link (https://aspredicted.org/c7pi3.pdf).

The Relationship Between Mattering and Suicidality

In more recent years, studies have taken research one step further to elucidate the connection between mattering and suicidality, showing just how important this concept is to mental health outcomes. Joiner (2005) first introduced the Interpersonal-Psychological Theory of Suicide (IPTS). His theory suggests that individuals die by suicide when they perceive themselves as a burden on others, feel as if they do not belong, and possess the capability for self-harm. Although this theory has received meta-analytic support, the effect sizes of 1) thwarted belongingness, perceived burdensomeness, and capability for suicide on number of prior suicide attempts, as well as 2) thwarted belongingness and perceived burdensomeness on suicidal ideation, were significant, albeit small (Chu et al., 2017). This indicates that the IPTS theory may not capture the entire essence of why people die by suicide. Adding a direct measure of mattering could strengthen this model (See Figure 1).

Although Joiner et al. concluded that low levels of mattering are significantly correlated with suicidal ideation, he used it as a proxy variable for burdensomeness, as he argued that both constructs can produce the idea that an individual's death has greater worth than life. However, we argue that perceptions of not mattering do not necessarily

mean individuals feel they are a burden, and that the two should be treated as separate

constructs. Joiner thus underplayed mattering's direct impact on suicidality. Similarly,

Elliott et al. (2005) proposed a chain model where mattering predicts self-esteem which

predicts depression using mattering as a proxy variable for suicidal ideation. Overall, Elliott

asserted that perceived mattering impacts feelings of social isolation, which in turn

determine mental health outcomes. These researchers have unfortunately neglected to

consider the direct effects of mattering on suicidality. Drabenstott (2019) called for a

unification of both the theory of mattering and the Interpersonal Psychological Theory of

suicide, a call which at present has been unheard. Thus, Study 2 aimed to answer the

current call to research concerning mattering and suicidality by examining the relationships

between mattering, loneliness, depression, and suicidal ideation, while also taking into

consideration the IPTS framework. The pre-registration for Study 2 can be found at the

following link (https://aspredicted.org/q57xi.pdf).

Figure 1

Conceptual Mediation Model: Loneliness, Mattering, Depression, and Suicide

Study 1

Through this initial study we tested the hypothesis that mattering mediates the

relationship between feelings of loneliness and depression. Using data previously collected

by our lab, we ran supplemental analyses of an archival dataset to test our initial theory that

perceived mattering can, in fact, be used as an independent, standalone construct of

wellbeing which may directly impact mental health outcomes. Further details regarding this study can be found elsewhere (Prinzing, Zhou, West, Le Nguyen, Wells, et al., 2020).

Study 1 Method

Participants

For this study, we used Amazon's Mechanical Turk crowd-sourcing platform to recruit 725 individuals between April 1st – April 8th, 2020 (T1). The study's inclusion criteria included being over the age of eighteen, speaking English as a first language, and being a current resident of the U.S. T1 individuals received $3 (USD) for their participation in our study. We excluded individuals who did not pass two or more attention checks ($n = 27$) such as "This is an attention check. Please mark 'Strongly disagree.'" We additionally excluded individuals who failed to follow DRM (see below) instructions in the short response section such as entering nonsensical text, giving impossible timeframes, or failing to write any text at all ($n = 123$). Thus, our final analyses for the T1 sample included 575 participants ($M_{age} = 36.69$, $SD_{age} = 11.54$; 49.6% men, 49.9% women, .5% Other; 8% Asian, 14% Black or African American, 4% Hispanic or Latinx, 65% White or European American, 7% Other, mixed, or preferred not to say). While most of this sample consisted of adults from across the country, we did oversample North Carolinians ($n = 151$) and Californians ($n = 167$).

Approximately one month later (T2: April 29th – May 7th, 2020), we invited the 575 individuals from the previous sample to complete an additional survey for $1 USD. Of the 330 responses we received, we disregarded some responses for failing attention checks ($n = 3$), and some for problems with their DRM short responses ($n = 27$). This left N = 300 participants for our T2 sample ($n = 91$ Californians, $n = 85$ North Carolinians; $M_{age} = 39.16$, $SD_{age} = 12.01$; 44.6% men, 54.3% women, 1.1% Other; 9% Asian, 11% Black or

African American, 4% Hispanic or Latinx, 68% White or European American, 7% Other,

mixed, or preferred not to say).

Finally, we asked the 300 individuals from T2 to complete another survey

approximately one month later (T3: May 27th - June 4th, 2020) for an additional $1 USD.

After disregarding one failed attention check, we analyzed $n = 251$ responses for the T3

sample ($n = 70$ Californians, $n = 74$ North Carolinians; $M_{age} = 39.22$, $SD_{age} = 11.66$; 45.6%

men, 53.2% women, 1.2% Other; 8.8% Asian, 12.8% Black or African American, 3.6%

Hispanic or Latinx, 67.6% White or European American, 6.4% Other, mixed, or preferred

not to say).

Procedure

For Study 1, we administered a survey approved by the Institutional Review Board

(number 20-0841) (See Appendix 1). Participants provided informed consent at the start of

the questionnaire. Participants completed a Day Reconstruction Method (DRM)

survey(Kahneman et al., 2004) where they reported their feelings during various social

episodes from the previous day. The survey asked individuals to walk through all the events

from the day before starting from the time they woke up until the time they went to bed

(See Appendix 1). Participants named each episode and recorded both its starting and

ending time and evaluated their emotions during each event. The relevant measures from

this study to the current paper include frequency of social interaction and negative mental

health outcomes.

Measures

Social Interaction Quantity. For every episode that the participants identified in

the DRM at T1, T2, and T3, they were asked if they interacted with anyone else during said

episode. This included interactions that occurred over the phone, through texts, and through

social media. We used the number of episodes in which participants reported an interaction as a measure of social interaction quantity to determine loneliness.

Negative Mental Health (NMH). Outside of the DRM, we assessed negative mental health at T1, T2, and T3 using the Patient-Reported Outcomes Measurement Information System (PROMIS; Hays et al., 2018). We utilized 4-item questionnaires for anxiety, depression, and stress, and a 5-item questionnaire for loneliness in this study, These measures were developed using item response theory (Hambleton & Swaminathan, 2013), and asked participants to use 5-point Likert scales (1 = "never", 5 = "always") to respond to statements about their psychosocial illbeing (sample items: from the anxiety scale, "My worries overwhelmed me"; from the depression scale, "I felt worthless"; from the loneliness scale, "I felt alone"; from the stress scale, "I felt nervous or 'stressed'"). These scales showed excellent internal reliability (all coefficient αs > .89).

Mattering.

We measured mattering using a modified version of the Multidimensional Existential Meaning Scale (mMEMS; original MEMS: George & Park, 2017). As mentioned earlier, comprehension, purpose, and mattering are thought to be the three subconstructs behind perceived meaning in life (MIL) (George & Park, 2016; Martela & Steger, 2016). The original MEMs thus had a 5-item subscale to measure each of the three subconstructs. However, a previous study (Prinzing & Fredrickson, in prep) found that questions which referenced "the grand scheme of the universe" distorted participants' responses. Thus, we replaced the original MEMS mattering subscale questions with five equivalent questions that did not frame perceived meaning in the context of the cosmos (sample items: "My life matters"; "My life is important"; "The things I do are important";

"My life is worthwhile"; "The things I do have value and significance"). The full mMEMS

showed excellent internal reliability (coefficient α = .96).

Analytic Plan

We used the *lavaan* package (Rosseel, 2012) in R in order to run a structural

equation model using a maximum likelihood estimation with robust (Huber-White)

standard errors and a scaled test statistic. This allowed us to test whether perceptions of

mattering mediated the association between social episodes, loneliness, and depression.

Cross-Sectional Mediation Model. We proposed six associations across four

variables to analyze in the cross-sectional mediation model. We suggested that T1 social

episodes would predict T1 loneliness, T1 mattering, and T1 loneliness, that T1 loneliness

would predict T1 mattering and T1 depression, and that T1 mattering would predict T1
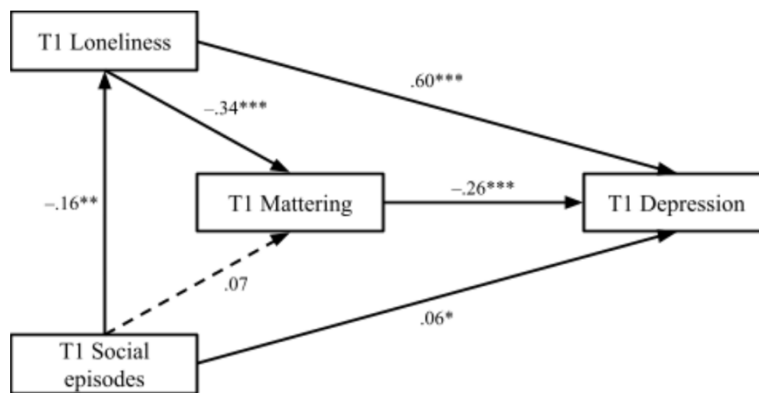
depression.

Longitudinal Mediation Model. We proposed eleven associations across six

variables to analyze in the longitudinal mediation model. This model again suggested

associations between social episodes, loneliness, mattering, and depression, but added

temporal separation between the predictor, mediating, and outcome variables. This model

suggested that T1 social episodes would predict T1 loneliness, T2 mattering, and T3

depression, that T1 loneliness would predict T2 mattering and T3 depression and be

associated with T1 mattering and T1 depression, that T1 mattering would predict T2

mattering and be associated with T1 loneliness and T1 depression, that T1 depression

would predict T3 depression and be associated with T1 mattering and T1 loneliness, and

that T2 mattering would predict T3 depression.

<div align="center">**Study 1 Results and Discussion**</div>

Social interaction frequency predicted loneliness ($\beta = -.16$, $p = .006$). Loneliness predicted both depression ($\beta = .60$, p < .001) and mattering ($\beta = -.34$, p < .001), which in turn also predicted depression ($\beta = -.26$, p < .001). There was a significant indirect effect of loneliness on depression via mattering ($\beta = .09$, $p < .001$). We observed a significant and positive direct effect of social episode count on depression ($\beta = .06$, $p < .023$), which was unexpected, but no indirect effect via mattering ($\beta = -.02$, $p = .076$). (See Figure 2)

Figure 2

Study 1 Results: Cross-Sectional Mediation Model – Social Episodes, Loneliness, Mattering, and Depression

Our longitudinal model showed excellent fit as well: $\chi2(4) = 4.72$, $p = .317$, CFI = .998, TLI = .994, Robust RMSEA = .032 (90% CI: .000, .122), SRMR = .046. We observed an indirect effect of T1 loneliness on T3 depression via T2 perceived mattering, ($\beta = .03$, $p = .049$). While T1 social interaction quantity did significantly predict T1 loneliness, ($\beta = -.14$, $p = .007$), we observed no significant direct effect of T1 social interaction quantity on T3 depression ($p = .412$), and no indirect effect via T2 mattering ($p = .126$). (See Figure 3).

Figure 3

Study 1 Results: Longitudinal Mediation Model – Social Episodes, Loneliness, Mattering, and Depression
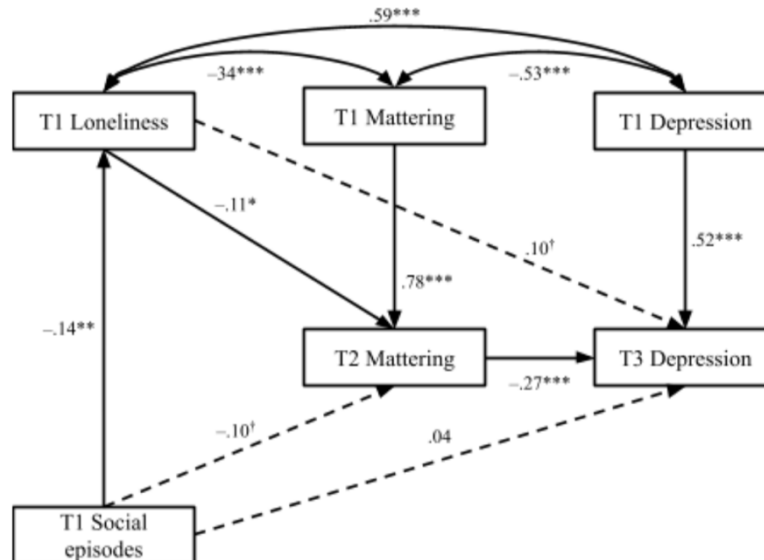
Results from Study 1 indicate that our hypothesis that mattering mediates the relationship between loneliness and depression was supported. While we hypothesized all pathways would be significant, we were surprised to find that number of social episodes was significantly and positively associated with depression in the cross-sectional model. A possible explanation for these results could be that a higher number of social episodes during the COVID-19 pandemic may have increased individuals' fear of exposure to the disease, thus leading to poorer mental health. Additionally, it is possible that the social episode and mattering pathway was not significant in either model because the quality of social interactions may be more influential to perceptions of mattering as opposed to the quantity of social interactions. Of note is the fact that our longitudinal model separated the predictor, mediator, and outcome variables across three different time points. By controlling for levels of mattering and depression at T1, we demonstrated that T1 loneliness predicted changes in perceived mattering, which in turn predicted changes in depression. Given that our model allowed for both temporal separation as well as prediction of changes,

our results are suggestive of causal pathways between loneliness, mattering, and depression. Study 1 therefore implies that mattering should indeed be seen as an independent and significant predictor of depression.

Study 2

Study 2 aimed to fill a critical gap in IPTS literature by establishing a direct relationship between mattering and depression as well as suicidality. The present study analyzed an observational and cross-sectional survey in order to both replicate the mattering and depression findings from Study 1, as well as establish the same relationship with mattering and suicidality. We also wanted to differentiate between different types of mattering to see whether or not that had an effect on depression and suicidal ideation, and thus analyzed context-free or general mattering, mattering to close others, and mattering to a community. We predicted that loneliness would be associated with depression and suicidality only in those participants who felt that they did not matter, regardless of the type of mattering.

Study 2 Method

Participants

We used two samples. The first sample was recruited using Amazon's Mechanical Turk crowd-sourcing platform. The second sample consisted of undergraduate students from a large public university in North Carolina recruited using the SONA system. Study 2's inclusion criteria paralleled Study 1 in that participants had to be over the age of eighteen, speak English as a native language, and currently reside in the U.S.

Sample 1: Undergraduate students. In October 2020, we recruited 252 participants using a departmental participant pool. These participants completed the study in exchange for course credit. We used the same procedure as in Sample 1 to screen for

low-quality responses. One response was flagged and excluded from analysis, leaving $N =$ 252 participants in this sample (M_{age} = 19.08, SD_{age} = 1.76; 66.6% women, 32.5% men, < 1% other gender; 12.7% Asian or Asian American, 9.5% Black or African American, 5.2% Hispanic or Latinx, 61.5% White or European American, 9.1% mixed race, 2.0% other race or did not answer).

Sample 2: Nationwide Adults. We recruited 401 adults from around the United States using Amazon's Mechanical Turk in November of 2020. Participants received $1 USD for the completion of their surveys. To screen for low-quality responses, we asked a research assistant to read the responses to an open-ended question and flag any that included garbled, nonsensical, or totally irrelevant text. The open-ended question was: "On the previous page, you responded to some statements about the degree to which you feel that your life matters. Would you please explain why you responded in the way that you did? (Please write about 2-3 sentences.)" In this sample, 14 responses were flagged, leaving N = 387 participants (M_{age} = 39.44, SD_{age} = 12.10; 51.2% women, 47.8% men, 1.0% other or prefer not to say; 3.6% Asian, 29.2% Black or African American, 3.4% Hispanic or Latinx, 57.1% White or European American, 5.7% mixed race, 1.0% other race or did not answer).

Procedure

For Study 2, we administered a second study approved by the Institutional Review Board (number 20-0582) (See Appendix 2). This form included eighty-one questions divided across eighteen sections and lasted approximately 15 minutes. Participants provided informed consent at the start of the questionnaire.

Measures

Mattering. Mattering was evaluated over four sections. Participants marked their agreement or disagreement with statements using a seven-point Likert scale (1 = "strongly disagree", 7 = "strongly agree"). Additionally, the questionnaire included a free response question for individuals to explain their context-free mattering answers in two to three sentences in order to keep responses brief. (sample items: from context-free mattering, "My life matters," from mattering to close others, "My life matters to the people I'm close with," from mattering to one's community, "My community considers my life worthwhile,"). Each of these measures displayed excellent internal reliability in both samples (all coefficient αs > .92).

Negative Mental Health (NMH). We assessed negative mental health using the same Patient-Reported Outcomes Measurement Information System (PROMIS; Hays et al., 2018) as Study 1. These scales showed excellent internal reliability (all coefficient αs > .89).

Suicidality. Next, participants responded to questions from the Depression Symptom Index – Suicidality Subscale (Joiner et al., 2002). Individuals selected one statement out of four that best described their current thoughts of suicidality and did this across four sections. The severity of each statement increased from responses one to four. (sample item: 1 = "I do not have thoughts of killing myself", 2 = "I am having thoughts of suicide but have not formed any plans", 3 = "I am having thoughts of suicide but have these thoughts somewhat under my control", 4 = "In all situations I have impulses to kill myself"). This measure displayed good internal reliability in both samples (coefficient αs = .88 and .93).

Demographics. Finally, participants completed a demographics section at the end of the survey.

Miscellaneous. The survey also included measures of perceived meaning in life, self-esteem, life satisfaction, authenticity, and narcissistic grandiosity. These were included as a part of a separate study and are not discussed here.

Analytic Plan.

We used the *lavaan* package (Rosseel, 2012) in R 4.0.0 in order to run a structural equation model using a maximum likelihood estimation with robust (Huber-White) standard errors and a scaled test statistic. This allowed us to test whether different perceptions of mattering mediated the association between social episodes, loneliness, and depression.

Context-Free Mediation Model. We proposed five significant relationships to evaluate in the study. We suggested that loneliness would predict depression and context-free mattering, that context-free mattering would predict depression and suicidality, and that depression would predict suicidality.

Differentiated Mediation Model. We proposed the same significant relationships in this mediation model as the context-free mediation, yet we distinguished between two types of interpersonal mattering. We suggested that loneliness would predict depression and mattering to close others and that mattering to close others would predict depression and suicidality. We also suggested that loneliness would predict depression and mattering to the community, that mattering to the community would predict depression and suicidality, and finally, that depression would predict suicidality.

Study 2 Results and Discussion

Our model evaluating context-free mattering and suicidal ideation displayed excellent fit: $\chi^2(2) = 4.62$, $p =. 099$, CFI = .994, TLI = .967, RMSEA = .064 (90% CI: .000, .143), SRMR = .012. All paths in the model were significant in both samples. We observed

significant indirect effects of loneliness on suicidal ideation through depression (Sample 1:

$\beta = .14$, $p = .002$; Sample 2: $\beta = .16$, $p < .001$) and mattering (Sample 1: $\beta = .14$, $p = .046$;

Sample 2: $\beta = .16$, $p < .001$). We also observed a significant indirect effect of mattering on

suicidal ideation through depression (Sample 1: $\beta = -.08$, $p = .003$; Sample 2: $\beta = -.11$, $p =$

.001). (See Figure 4).
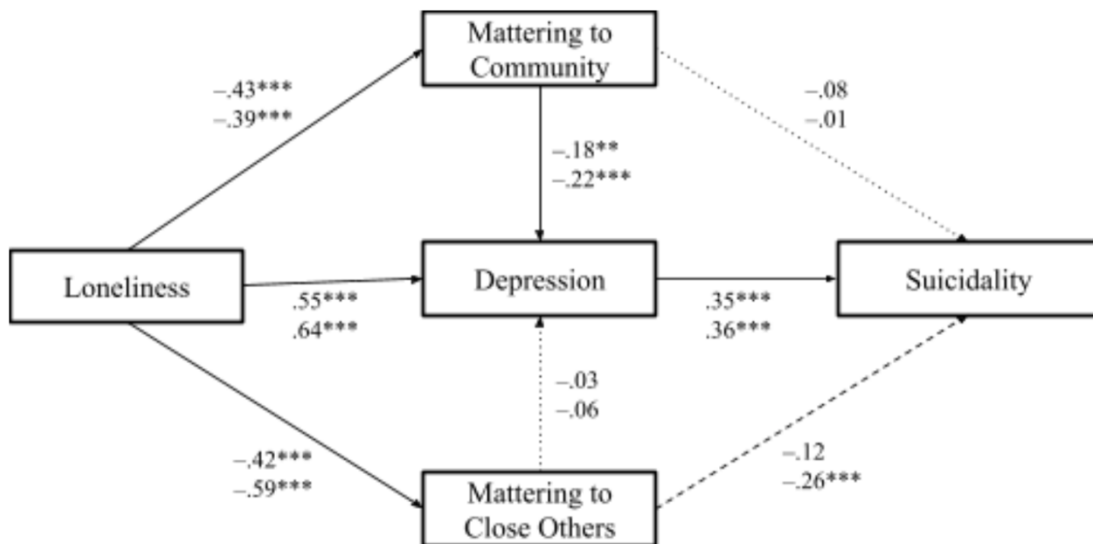
Figure 4

Context-Free Mattering Results:
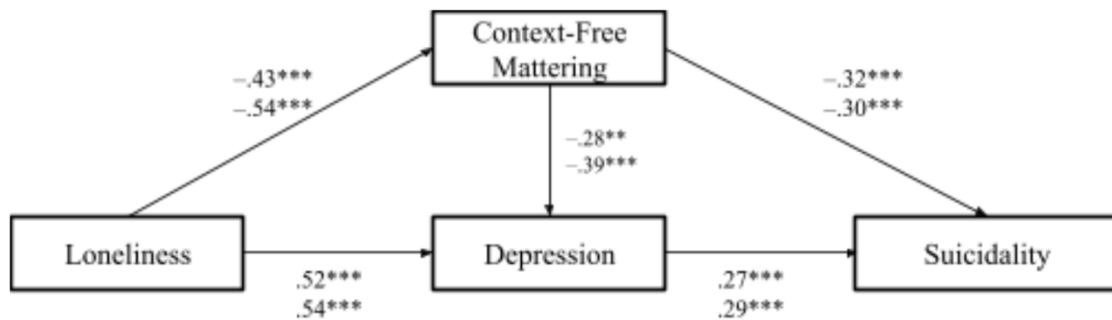
Note. The top numbers represent the standardized coefficients for Sample 1, while the

bottom numbers represent the standardized coefficients for Sample 2.

Additionally, our models evaluating both mattering to the community and mattering

to close others displayed excellent fit: $\chi^2(2) = 1.71$, $p = .425$, CFI $= 1.00$, TLI $= 1.00$,

RMSEA $= .000$ (90% CI: .000, .101), SRMR $= .007$. In Sample 1, we found that

suicidality was predicted by depression ($\beta = .35$, $p < .001$), but not close mattering ($p =$

.201) or community mattering ($p = .234$). Depression was significantly predicted by

loneliness ($\beta = .55$, $p < .001$) and community mattering ($\beta = -.18$, $p = .006$), but not close

mattering ($p = .763$). Moreover, we observed a significant indirect effect of loneliness on

suicidality through depression ($\beta = .19$, $p = .001$), as well as a significant indirect effect of

community mastering on suicidality via depression ($\beta -.06$, $p = .041$).

In Sample 2, we found that suicidality was predicted by depression (β = .36, p <

.001) and close mattering (β = –.26, p < .001), but not community mattering (p = .907).

Depression was significantly predicted by loneliness (β = .64, p < .001) and community

mattering (β = –.22, p = .006), but not close mattering (p = .241). Moreover, we observed

significant indirect effects of loneliness on suicidality through depression (β = .23, p <

.001) and close mattering (β = .13, p < .001), but not through community mattering (p =

.907). Though there was no direct effect of community mattering on suicidality (p = .907),

we did observe a significant indirect effect through depression (β = –.08, p = .002). (See

Figure 5).

Figure 5

Differentiated Mattering Results:

Note. The top numbers represent the standardized coefficients for Sample 1, while the

bottom numbers represent the standardized coefficients for Sample 2.

Both samples in Study 2 met all of the initial aims for our proposed general

mattering model. We replicated the findings from our Study 1 archival analysis and found

further support for our hypothesis that mattering mediates the relationship between loneliness and depression. We also showed that context-free mattering, or the perception of mattering in general, contributes to thoughts of suicidality, as it mediated the relationship between loneliness and suicidality, as well as depression and suicidality. Our results were more varied once we distinguished between types of mattering, however. In both samples we found evidence of indirect effects of community mattering on suicidality. We also found evidence of a direct effect of close mattering on suicidality amongst nationwide adults, but this relationship did not hold in the undergraduate sample. On the other hand, we found no evidence of a direct effect of community mattering on suicidality in either sample, nor did we find evidence of an indirect effect through depression in either sample. This was surprising given that mattering had a direct effect on suicidality in the context-free mattering results. Overall, H1 and H2 were supported in both samples in the context-free model, but H2 was only partially supported in the differentiated model. This may suggest that individuals' perception of mattering as a whole affects their mental health outcomes more than individual subcategories of mattering. It is also possible that the context-free mattering construct captures all aspects of mattering that individuals perceive to be relevant or important, while more specific categories of mattering may only capture small parts of the mattering experience whose importance could vary from person to person.

Conclusion

To our knowledge, the current study was the first to investigate the links between loneliness, mattering, depression, and suicidal ideation. Our results buttressed Rosenberg and McCullough's (1981) claims that mattering can indeed act as a standalone predictor of mental health outcomes, specifically depression and suicidality. We found divergent evidence from more recent publications such as Joiner (2005) who argued mattering should

be used as a proxy variable for other constructs, as well as Elliot (2005), who claimed that mattering's effect on mental health is mediated by outside variables. Future research will likely benefit from treating mattering as an independent predictor of negative mental health outcomes, as mattering appears to have direct links with variables such as depression and suicidality.

Implications and Limitations

This research sheds further light on the deleterious mental health impact of the COVID-19 pandemic. Killgore and colleagues (2020) compared mean levels of loneliness during 2020 to levels reported in 2003 and found that feelings of loneliness were significantly elevated from years past. While studies have documented generally poorer mental health during the pandemic (Czeisler et al., 2020; NCHS, 2020), less research has been done to understand why these deteriorations in wellbeing occurred. Our study therefore provides further insight into the mechanisms through which social isolation leads to poorer mental health.

Neither of our studies were randomized experiments, and therefore we cannot draw causal conclusions. However, the longitudinal design of Study 1 allowed for temporal separation between the predictor, mediating, and outcome variables—which is a pre-requisite for causation. Hence, our results are suggestive of pathways between loneliness, mattering, and depression, where feelings of loneliness decrease individuals' perceptions of mattering, which in turn lead to depression and suicidal ideation. Overall, these studies provide further evidence for Drabenstott's (2019) argument that concepts of mattering should be more thoroughly integrated into Joiner's (2005) Interpersonal Psychological Theory of Suicide.

Assuming that they continue to replicate in large and diverse samples, our results suggest that it may be beneficial to target perceived mattering as a protective factor against negative mental health during the COVID-19 pandemic as well as future situations which limit socialization. That said, our results suggest that addressing judgements about mattering to a community may be more effective for depression interventions rather than suicidal ideation interventions. This could be applied to both emerging adult and adult populations. It also seems that increasing perceptions of mattering to close others may be more effective for suicidal ideation interventions with adults as opposed to college students.

Suggestions for Future Research

Future studies should replicate our models using both experimental and longitudinal designs. For example, researchers could assign participants to a Cognitive Behavioral Therapy intervention where individuals write about situations where they felt they clearly mattered to their loved ones such as friends or family members and see if that intervention affects negative mental health as mediated by close mattering. This could also be done with community mattering as well. Another theoretical experimental design could involve assigning individuals to participate in direct volunteer activities such as serving meals at a homeless shelter or completing necessary tasks at home to increase perceptions of community and/or close mattering.

More research is needed to understand why generalized mattering is more impactful to depression than mattering to close others. Additional studies are also needed to distinguish why only mattering to close others in adults had a direct effect on suicidality in the differentiated model. Future research should also test these models with samples of adolescents and older adults, as these are the age groups that generally have the lowest levels of perceived mattering (Schieman & Taylor, 2001), and it would be interesting to see

how our results map on to populations with lower average levels of perceived mattering. Furthermore, while our study took into account two measures of intrapersonal mattering, a plethora of other types of mattering categories exists such as mattering to the cosmos, mattering to the world, mattering to a profession, and so on. Finally, it is important to continue to distinguish which types of mattering are most impactful to depression and suicidality. Researchers need to evaluate more categories of mattering to continue to elucidate which types of mattering matter most in determining subsequent mental health.

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Appendix 1

The measures used in the analyses for Study 1 are below. Details regarding the full survey are available in the online materials associated with (Prinzing, Zhou, West, Le Nguyen, & Fredrickson, 2020).

Study 1 Survey

Social Interaction Quantity

For each episode in a Day Reconstruction, participants were asked the following question:

We'd like to know if you were interacting with anyone during this episode. An interaction is defined as any encounter (including by phone, text messaging, e-mail, social media, etc.) of a few minutes or longer with another person(s) in which the participants attended to one another and adjusted their behavior in response to one another.   During this episode, were you interacting with anyone (including by phone, text messaging, e-mail, video chatting, etc)? [0 = "No", 1 = "Yes]

Stress

In the past 7 days... [1 = "Never" – 5 = "Always"]

1. I felt nervous and "stressed"

2. I found that I could not cope with all the things that I had to do

3. I felt difficulties were piling up so high that I could not overcome them

4. I felt that I were unable to control the important things in my life

Anxiety

In the past 7 days... [1 = "Never" – 5 = "Always"]

1. I felt fearful

2. I found it hard to focus on anything other than my anxiety

3. My worries overwhelmed me

4. I felt uneasy

Depression

In the past 7 days... [1 = "Never" – 5 = "Always"]

1. I felt worthless

2. I felt helpless

3. I felt depressed

4. I felt hopeless

Loneliness

In the past 7 days... [1 = "Never" – 5 = "Always"]

1. I felt alone and apart from others

2. I felt left out

3. I felt that I am no longer close to anyone

4. I felt alone

5. I felt lonely

Mattering

[1= Strongly disagree – 7 = Strongly agree]

1. My life matters

2. My life is important

3. The things I do are important

4. My life is worthwhile

5. The things I do have value and significance

Appendix 2

Study 2 Survey

Context-free mattering

To what extent do you agree with the following statements?

[1= Strongly disagree – 7 = Strongly agree]

1. My life matters.

2. My life is important.

3. My life is worthwhile.

4. My life has value and significance.

Free response

Would you please explain your responses to the statements on the last page? Why did you

respond in the way that you did? (Please write about 2-3 sentences.)

Mattering to close others

To what extent do you agree with the following statements?

[1= Strongly disagree – 7 = Strongly agree]

1. My life matters to the people I'm close with.

2. My life is important to those who know me.

3. People close to me consider my life worthwhile.

4. Those who know me consider my life to have value and significance.

Mattering to one's community

To what extent do you agree with the following statements?

[1= Strongly disagree – 7 = Strongly agree]

1. My life matters to my society.

2. My life is important to my community.

3. My community considers my life worthwhile.

4. My society considers my life to have value and significance.

Mattering to the cosmos

To what extent do you agree with the following statements?

[1= Strongly disagree – 7 = Strongly agree]

1. My life matters in the grand scheme of the universe.

2. My life is important in the context of the cosmos.

3. Despite the vast scale of the universe, my life is worthwhile.

4. My life has value and significance, even in a cosmic context.

Depression

Please respond to each question or statement by marking one option per question. In the

past 7 days…

[1= Never – 5= Always]

1. I felt worthless.

2. I felt helpless.

3. I felt depressed.

4. I felt hopeless.

Perceived Personal Meaning Scale

To what extent do you agree with the following statements?

[1= Strongly disagree – 7 = Strongly agree]

1. My life as a whole has meaning.

2. I am able to spend most of my time in meaningful activities and pursuits.

3. I led a meaningful life in the past.

4. At present, I find my life very meaningful.

5. My entire existence is full of meaning.

6. I look forward to a meaningful life in the future.

7. My life is meaningless.

8. My existence is empty of meaning.

Stress

Please respond to each question or statement by marking one option per question. In the

past 7 days…

 [1= Never – 5= Always]

1. I have felt nervous and stressed

2. I found that I could not cope with all the things I had to do.

3. I felt difficulties were piling up so high that I could not overcome them

4. I felt that I was unable to control the important things in my life.

Rosenburg Self-Esteem Scale

Below is a list of statements dealing with your general feelings about yourself. Please

indicate how strongly you agree or disagree with each statement.

[1= Strongly Agree – 4= Strongly Disagree]

1. On the whole, I am satisfied with myself.

2. At times I think I am no good at all.

3. I feel that I have a number of good qualities.

4. I am able to do things as well as most other people.

5. I feel I do not have much to be proud of.

6. I certainly feel useless at times.

7. I feel that I'm a person of worth, at least on an equal plane with others.

8. I wish I could have more respect for myself.

9. All in all, I am inclined to feel that I am a failure.

10. I take a positive attitude toward myself.

Anxiety

Please respond to each question or statement by marking one option per question. In the

past 7 days…

 [1= Never – 5= Always]

1. I felt fearful.

2. I found it hard to focus on anything other than my anxiety.

3. My worries overwhelmed me.

4. I felt uneasy.

Satisfaction with Life Scale

To what extent do you agree with the following statements?

[1= Strongly disagree – 7 = Strongly agree]

1. In most ways my life is close to my ideal.

2. The conditions of my life are excellent.

3. I am satisfied with my life.

4. So far I have gotten the important things I want in life.

5. If I could live my life over, I would change almost nothing.

Authenticity Scale

To what extent do the following statements describe you?

[1 = Does not describe me at all – 7 = Describes me very well]

Authentic Living

1. I am true to myself in most situations.

2. I live in accordance with my values and beliefs.

3. I think it is better to be yourself than to be popular.

4. I always stand by what I believe in.

Self-Alienation

5. I don't know how I really feel inside.

6. I feel as if I don't know myself very well.

7. I feel out of touch with the 'real me.'

8. I feel alienated from myself.

Loneliness

Please respond to each question or statement by marking one option per question. In the past 7 days…

[1= Never – 5= Always]

1. I felt alone and apart from others.

2. I felt left out.

3. I felt that I am no longer close to anyone.

4. I felt alone.

5. I felt lonely.

Narcissistic Grandiosity Scale

To what extent to the following words describe you?

[1 = Not at all – 7 = Extremely]

- Glorious

- Prestigious

- Acclaimed

- Prominent

- High-status

- Powerful

Depression Symptom Index – Suicidality Subscale

On this questionnaire there are a series of statements. Select the statement in each group

that best describes you in the past two weeks. If several statements in a group seem to apply

to you, pick the one with the higher number. Be sure to read all of the statements in each

group before making your choice.

Group A

I do not have thoughts of killing myself.

Sometimes I have thoughts of killing myself.

Most of the time I have thoughts of killing myself.

I always have thoughts of killing myself.

Group B

I am not having thoughts of suicide.

I am having thoughts of suicide but have not formed any plans.

I am having thoughts of suicide and am considering possible ways of doing it.

I am having thoughts of suicide and have formed a definite plan.

Group C

I am not having thoughts of suicide.

I am having thoughts of suicide but have these thoughts completely under my control.

I am having thoughts of suicide but have these thoughts somewhat under my control.

I am having thoughts of suicide and have little or no control over these thoughts.

Group D

I am not having impulses to kill myself.

In some situations I have impulses to kill myself.

In most situations I have impulses to kill myself.

In all situations I have impulses to kill myself.

Demographics

Thank you for participating in our research. Before you go, we would like to know a little about the group of people participating in this study.

1. What is your age in years? (Please write your answer in numerical digits. For example, 23) [Text entry]

2. What is your gender? [Man, Woman, Other or prefer not to say]

3. What is your ethnicity? (Select all that apply.) [Ethnicity checklist]

4. Which of these categories best describes your total combined household income for the past 12 months? This should include income (before taxes) from all sources, wages, rent from properties, social security, disability and/or veteran's benefits, unemployment benefits, workman's compensation, help from relatives (including child payments and alimony), and so on. [Numerical Selection]

5. What is your educational background? [Some high school, High school diploma or equivalent, Some college, Bachelor's degree, Post-graduate degree, Other or prefer not to say]

6. What is your employment status? [Part-time employee, Full-time employee, Self-employed, Student, Not employed, Retired, Other or prefer not to say]

7. Think of this ladder as representing where people stand in the United States. At the top of the ladder are the people who have the most money, most education, and most respected jobs. At the bottom are the people who have the least money, least education, and least respected jobs or no job. The higher up you are on this ladder,

the closer you are to the people at the very top, and the lower you are, the closer you

are to the people at the very bottom. Where would you place yourself on this

ladder? Please select the rung where you think you stand at this time in your life,

relative to other people in the United States. [Select 1-10]

8. To what extent do you consider yourself a religious person? [1=not at all religious –

   5=extremely religious]

9. On the average day, how much time do you spend on social media? (Please write

   the number of hours rounded to the nearest half hour. For example, 2.5) [Text-

   entry]

10. Social media can be used actively or passively. Active use involves posting

    something, writing something in response to another person's post, etc. Passive use

    involves scrolling through feeds, looking at what others have posted, etc. What

    proportion of your time on social media would you say involves active use? [Sliding

    scale 0-100%]

11. How much would it bother you if you could not access your social media? [1=Not

    at all – 5=a lot]

Debrief

Thank you for participating in this study! Now that you are finished, we can explain

our hypotheses in detail. We indicated before that we are interested in better understanding

the relationships between different aspects of psychological well-being. More specifically,

we are interested in the feeling that one matters, and how this feeling is related to well-

being variables like life satisfaction, and pleasant emotions, as well as ill-being variables

like stress, depression, and anxiety.

We hypothesize that the feeling that one matters *to others* will be more strongly related to these variables than the feeling that one matters in grand scheme of things. We are also interested in seeing which kind of mattering people gravitate towards naturally. We predict that people who think about how they matter will default to social, as opposed to "cosmic", mattering.

As we said before, our research team anticipates no risks in this study beyond those of simple self-reflection. However, if any of your responses to these survey items cause you concern or distress, please contact your mental health provider. You can call the National Alliance on Mental Illness emergency hotline at 1-800-950-6264, Monday-Friday from 10 a.m. to 6 p.m. EST. The National Suicide Prevention Lifeline is available 24/7 at 1-800-273-8255. Additionally, you may send a message to the Crisis Textline by texting HOME to 741-741.

Clicking the next button at the bottom of this page will submit your responses. If for any reason you wish to be withdrawn from the study, do not click the next button and simply close this browser window. If you have any questions about this research, you can contact Michael Prinzing by emailing prinzing@live.unc.edu. If you have questions or concerns about your rights as a research subject, you may contact the UNC Institutional Review Board at 919-966-3113 or by email to IRB_subjects@unc.edu.

Thank you again for your participation.