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Mental Pain, Psychological Distress, and Suicidal Ideation During the COVID-19 Emergency:

The Moderating Role of Tolerance for Mental Pain

Giulia Landi[1,2]*, Ariella Grossman-Giron[3,4], Dana Tzur Bitan[3,4], Mario Mikulincer[5], Silvana Grandi[1,2], and Eliana Tossani[1,2]

[1] Department of Psychology, University of Bologna, Viale Berti Pichat 5, 40127 Bologna, Italy

[2] Laboratory of Psychosomatics and Clinimetrics, Department of Psychology, University of Bologna, Viale Europa 115, 47023 Cesena, Italy

[3] Department of Behavioral Sciences, Ariel University, Ariel, Israel

[4] Shalvata Mental Health Center, Hod Hasharon, affiliated with the Sackler School of Medicine, Tel Aviv University, Ramat Aviv, Israel

[5] Interdisciplinary Center Herzlyia, P. O. Box 167, 46150 Herzliya, Israel

Author Note

Corresponding Author: Giulia Landi, Department of Psychology, University of Bologna, viale Berti Pichat 5, 40127 Bologna, Italy. Phone: 0039 346 7541495. E-mail: giulia.landi7@unibo.it.

Abstract

The psychosocial stressors related to the ongoing COVID-19 pandemic and associated lockdowns have been shown to lead to an exacerbation of suicide risk. The present study aims to examine (a) the contribution of mental pain intensity to psychological distress and suicidal ideation during the COVID-19 pandemic and (b) the protective role of mental pain tolerance in buffering these adverse mental health effects. A total of 652 adults (74.2% female, $M = 33.99$ years, $SD = 13.74$) were assessed through an online survey during the first mandatory lockdown in Italy. Participants completed measures of mental pain intensity and tolerance, psychological distress and suicidal ideation. Results showed that mental pain intensity significantly predicted increases in psychological distress and suicidal ideation while mental pain tolerance significantly buffered the adverse effects of mental pain intensity on psychological distress and suicidal ideation. The findings highlight that tolerance for mental pain may act as a powerful protective factor during the pandemic. Evidence-based public health interventions fostering tolerance for mental pain during a pandemic are needed in order to effectively reduce suicide in potential risk groups.

Keywords: COVID-19 pandemic; mental pain; tolerance for mental pain; psychological distress; suicidal ideation

Introduction

The Coronavirus disease 2019 (COVID-19) outbreak worldwide has led many countries to issue unprecedented physical distancing measures in an attempt to contain the spread of the virus and to alleviate the burden on healthcare systems. Many countries, severely affected by the pandemic, employed national lockdowns, which included quarantines, reduced social contacts, and limitations on movements of the general populations. A large body of evidence indicates that these

restrictions, accompanied by the intense fear of severe illness, loneliness, financial problems, and uncertainty over the course of the pandemic, have profound adverse mental health implications (Bakioğlu et al., 2020; Besser et al., 2020; Brooks et al., 2020; Daly & Robinson, 2021; Landi, Pakenham et al., 2020; Pakenham et al., 2020). Meta-analyses of community-based studies revealed a pooled prevalence of 18-33% of depressive symptoms (Bueno-Notivol et al., 2020) and 24-31% of anxiety symptoms (Kan et al., 2021) during the first months of the COVID-19 emergency. A systematic review, Xiong and colleagues (2020) further reported an increase in rates of psychological distress following the emergence of the pandemic among the general population in countries such as China, Spain, Italy, the US, Turkey, Nepal, and Denmark (Xiong et al., 2020).

Suicidal Ideation During the COVID-19 Pandemic

The adverse psychological outcomes and the psychosocial stressors related to the COVID-19 crisis have led researchers worldwide to raise concerns regarding the potential raise of suicidal behaviors during and after the pandemic (Leaune et al., 2020; Gunnell et al., 2020; Mamun et al., 2020). For example, an online study carried out in the UK on a national representative sample of 44,775 people revealed that 18% of participants reported experiencing suicidal thoughts in the first month of lockdown, whereas 5% of participants reported harming themselves at least once since the start of lockdown (Iob et al., 2020). Accordingly, another online survey conducted in the US indicated that 17.5% of respondents reported suicide ideation, whereas 4.9% had attempted suicide since the beginning of the COVID-19 pandemic (Ammerman et al., 2021). Finally, a recent systematic review and meta-analysis of 54 studies ($N = 308,596$) revealed an increase in rates of suicidal thoughts (10.81%), suicide attempts (4.68%), and self-harm (9.63%) during the COVID-19 pandemic relative to rates documented in pre-pandemic investigations (Dubé et al., 2021).

These disconcerting trends have led researchers to identify relevant risk and protective factors for suicidal ideation and psychological distress during the COVID-19 pandemic in order to aid decision-makers and clinicians to develop appropriate interventions (Niederkrotenthaler, Braun, et al., 2020). For this reason, the current study explored the role of *mental pain* as a risk factor for

suicidal ideation and psychological distress, and of *tolerance for mental pain,* as a protective factor during the first lockdown of the COVID-19 pandemic (e.g., Becker et al., 2019; Orbach et al., 2003).

Mental Pain Intensity and Tolerance as Potential Risk and Protective Factors During the COVID-19 Pandemic

Mental pain, also known as "psychache" (Shneidman, 1993), is defined as an acute state of intense psychological pain associated with negative cognitive and emotional aspects of the self – i.e., thoughts of self-disappointment or inadequacies and feelings of guilt, anguish, fear, panic, angst, loneliness, and helplessness often accompanied by a sense of disconnection, loss, or incompleteness of the self (Bolger, 1999; Orbach et al., 2003; Tossani et al., 2013). Mental pain is viewed as stemming from the discrepancy between the ideal and the actual perception of self, accompanied by the awareness of one's role in the experience of emotional pain (Tossani et al., 2013). Over the years a growing body of evidence has underlined the transdiagnostic nature of this construct as mental pain has been found to be a risk factor for a wide variety of various psychiatric problems, ultimately regarded as one of the most important proximal predictors of suicidal risk well beyond depression (e.g., Montemarano et al., 2018; Tossani et al., 2013; Verrocchio et al., 2016).

Conversely, *tolerance for mental pain*, or the extent to which one can endure and manage the aversive state of mental pain, has been considered a protective mental health factor related to adaptive responses to psychological pain during stressful periods (Meerwijk et al., 2019). As such, tolerance for mental pain has been associated with higher emotion regulation skills (e.g., Becker et al., 2019) and with lowered depressive symptomatology and suicidal ideation (e.g., Landi, Furlani, et al., 2020; Meerwijk & Weiss, 2018). Moreover, the level of tolerance for mental pain has been shown to differentiate suicidal attempters from non-suicidal psychiatric inpatients (e.g., Levinger et al., 2015; Segal-Engelchin et. al, 2015; Shelef et al., 2015). Thus, whereas the intensity of mental pain seems to be associated with heightened psychological distress and suicidality, findings suggest that mental pain tolerance seems to function as a resilience-fostering, protective factor. These

mental-health repercussions of mental pain intensity and tolerance may be especially relevant during the COVID-19 pandemic and lockdowns as individuals have been found to report elevated levels of psychological distress and suicidal ideations.

Study Aims

This study aimed to examine the role of mental pain intensity and tolerance in predicting psychological distress and suicidal ideations during the first COVID-19 lockdown in Italy. The research hypotheses were: (a) Mental pain intensity would act as a risk factor for negative mental health indicators, so that the higher the reported intensity of mental pain, the more severe the psychological distress and suicidal ideation during the lockdown; (b) tolerance for mental pain would act as a moderating factor, buffering the adverse effects of intensity of mental pain on psychological distress during the lockdown. Furthermore, we aimed to examine the protective role of mental pain tolerance with regard to suicidal ideation. We hypothesized that (c) tolerance for mental pain would weaken the link between mental pain intensity and suicidal ideation during the pandemic lockdown.

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Methods

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Participants and Procedure

This cross-sectional survey took place during the first Italian mandatory lockdown between April and May 2020. Inclusion criteria were living in Italy and being a minimum of 18 years old. Recruitment was conducted through social media. The survey was advertised as a research designed to investigate the psychological effect of the COVID-19 emergency, was administered online and took approximately 15–20 minutes to complete. The study was approved by a university institutional human research ethics committee and participants signed an online informed consent.

Measures

Demographics and COVID-19 and Lockdown-related Variables

Participants indicated their age, gender, marital status, education, employment, and SES. The following lockdown-related information was also collected: the number of days in lockdown, testing positive for COVID-19, family members testing positive or deceased due to COVID-19.

Intensity and Tolerance for Mental Pain

The intensity of mental pain was assessed with a 31-item Italian version of the Orbach & Mikulincer Mental Pain scale (OMMP; Orbach et al., 2003), translated and validated by Tossani et al. (2021). This scale taps the extent to which mental pain is perceived as irreversible (e.g., "The difficult situation will never change") and the extent to which people experience pain-related narcissistic wounds (e.g., "I feel abandoned and lonely"), emotional flooding (e.g., "My feelings change all the time"), freezing and loss of control (e.g., "I feel paralyzed") and feelings of meaningless and emptiness (e.g., "I can't find meaning in my life"). Participants rated each item on a 5-point scale, ranging from 1 (*not at all*) to 5 (*very strongly*). The Italian version demonstrated good psychometric properties (Tossani et al., 2021; α=.89 in the current sample).

The Italian version of the Tolerance for Mental Scale-10 (TMPS-10; Meerwijk et al., 2019), translated and validated by Landi, Furlani and colleagues (2020) was used to assess the extent to which people can manage the pain (e.g., "I can get the pain out of my mind,") or endure it (e.g. "I believe that the time will make the pain disappear"). Items are rated on a 5-point scale, ranging from 1 (*not true*) to 5 (*very true*). The scale demonstrated good psychometric properties (Meerwijk et al., 2019; α=.89 in the current sample).

Psychological Distress and Suicidal Ideation

We operationalized psychological distress with the three outcomes: peritraumatic distress, anxiety and depression. Specifically, we used the COVID-19 Peritraumatic Distress Index (CPDI; Qiu et al., 2020) to assess peritraumatic distress due to the COVID-19 emergency (e.g., "I cannot sleep well. I always dream about myself or my family being infected by COVID-19" or "I avoid watching COVID-19 news, since I am too scared to do so"). Items are rated on a 5-point scale (0=*never* to 4=*most of the time*). In a confirmatory factor analysis of the Italian version, Landi,

Pakenham et al. (2020) eliminated 5 items with low factor loadings and found a good one-factor

model fit (α=.89 in the current sample). Anxiety and depression were assessed with the Italian

versions (Kroenke & Spitzer, 2010) of the General Anxiety Disorder Scale (GAD-7; Spitzer, et al.,

2006) and of the Patient Health Questionnaire (PHQ-9; Spitzer et al., 1999). Items were rated on a

4-point Likert scale (0=*not at all* to 3=*nearly every day*). These measures have been shown to be

psychometrically sound in previous studies (Kroenke & Spitzer, 2010; α=.90 and α=.87 in the

current sample). In order to assess suicidal ideation, we isolated participants' responses to item 9 of

the PHQ-9 (i.e. "Thoughts that you would be better off dead, or of hurting yourself"), which is a

common screener for suicidal risk (e.g., Simon et al., 2013).

Statistical Analysis

All analyses were performed in SPSS 24 and with Process v.3.5. Before conducting

moderation analyses, we examined the skewness and kurtosis values of all study variables. The

values were acceptable for all variables except for suicidal ideation, which was positively skewed

(skew = 2.91, SD = 0.96). To correct for skewness, according to guidelines by Curran et al. (1996),

we log-transformed suicidal ideation and skewness was checked again and found to be within

acceptable limits (skew = 1.94, SD = 0.96). To test the moderating role of tolerance for mental pain

(W variable) in the link of mental pain intensity (X variable, focal predictor) to psychological

distress and suicidal ideation (Y, dependent variables), moderation analyses were performed with

Process Model 1 (Hayes, 2018). Moderation was established when the interaction (X × W) was

significant (Hayes, 2018). As gender and age were the only demographics that significantly

correlated with mental health outcomes, we controlled for them in moderation analyses (see Table

1). In order to reduce potential problems related to high multicollinearity, both the focal predictor

(mental pain intensity) and the moderator (tolerance for mental pain) were mean-centered in all

moderation analyses. To further probe the interaction, values of the moderator were selected (e.g.,

high = +1 SD above the mean, average = mean, and low = –1 SD below the mean) and the effect of

the focal predictor (mental pain intensity) at those values was estimated (Hayes, 2018).

Results

Sample Characteristics

The sample was composed of 652 adults, 75.3% female, aged 18 to 81 ($M = 38.8$, $SD = 13.2$). Approximately half of the sample (48.1%) had a bachelor's degree, and 26.4% completed high school. Almost half (46.0%) of the sample were was either married or living with a partner, while 7.4% were widowed or divorced. Most participants (81.3%) indicated to belong to the middle socioeconomic band, 10.6% to the lower and 8.2% identified themselves as wealthier than the average. More than half of the participants (66.4%) were employed, 11.2% were students, and 9.6% were unemployed. The mean days spent in lockdown was 35.70 ($SD = 8.41$). A total of 178 participants (18.9%) reported having been infected by COVID-19. A quarter of the sample (25.5%) reported having family members infected by COVID-19, 16.7% died due to COVID-19. Participants exhibited a prevalence of 18–32% of moderate to severe psychological distress[1], with 15.3% of the sample displaying the presence of suicidal ideations (10.1% several days, 2.5% more than half of the days, and 2.8% nearly every day).

Links of Mental Pain Intensity to Psychological Distress and Suicidal Ideation During the COVID-19 Pandemic

Our first prediction that mental pain intensity would be associated with higher psychological distress and suicidal ideation during the COVID-19 pandemic and mandatory lockdown was supported (see Table 1). Correlations of mental pain intensity with heightened psychological distress were significant and of a large magnitude, ranging between 0.71 and 0.80, all $ps < 0.001$. Furthermore, mental pain displayed a moderate to large significant association with heightened suicidal ideation, $r = 0.46$, $p < 0.001$.

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[1] Rates of moderate to severe psychological distress were calculated with normative scores of the measures used to assess peritraumatic distress, anxiety, and depression. Specifically, the following cut-off scores were employed: CPDI, 28–51= moderate distress, ≥ 52 = severe distress (Qiu et al., 2020); GAD-7, 10–14 = moderate anxiety, 15–21 = severe anxiety (Spitzer et al. 2006); PHQ-9, 10–14 = moderate depression, 15–19 = moderately severe depression, 20–27 severe depression (Spitzer et al., 1999). Rates of suicidal ideation were reported based on responses to item 9 of the PHQ-9 concerning suicidal risk (i.e., 0 = not at all, 1 = several days, 2 = more than half of the days, and 3 = nearly every day).

The Protecting Role of Tolerance for Mental Pain During the COVID-19 Pandemic

To examine the prediction that tolerance for mental pain would buffer the association between mental pain intensity and increases in psychological distress, three simple moderation analyses were conducted. The interaction between mental pain intensity and tolerance for mental pain was significant for peritraumatic distress ($\beta = -0.043$, $SE = 0.015$, $p < 0.01$), anxiety ($\beta = -0.023$, $SE = 0.007$, $p < 0.001$), and depression ($\beta = -0.031$, $SE = 0.006$, $p < 0.001$). As indicated in Table 2, the full models predicted between 54.1% and 66.6% of the variance in psychological distress whereas the interaction exclusively predicted between 0.5% and 1.4% of the variance. Mental pain and all levels of tolerance for mental pain (low, average, and high) were significantly related to psychological distress. A further examination of the source of the significant interaction (see Figure 1) revealed that higher tolerance for mental pain significantly weakened the positive link of mental pain intensity to psychological distress.

To analyze the prediction that tolerance for mental pain would buffer the association between mental pain intensity and heightened suicidal ideation, one simple moderation analysis was carried out. Results showed that the interaction between mental pain intensity and tolerance for mental pain was significant ($\beta = -0.007$, $SE = 0.001$, $p < 0.001$; see Table 2). The model predicted 36.1% of the variance in suicidal ideation and the interaction exclusively predicted 0.5% of the variance. Mental pain and all levels of tolerance for mental pain (low, average, and high) were significantly associated with suicidal ideation. Inspection of the source of the significant interaction is reported in Figure 1 and indicates that higher tolerance for mental pain significantly weakened the positive link of mental pain intensity to suicidal ideation.

Discussion

The current study explored whether the intensity of mental pain is a risk factor for psychological distress and suicidal ideation during the COVID-19 pandemic and lockdown. As predicted, findings indicated that mental pain intensity was associated with heightened levels of psychological distress and suicidal ideation. These results are consistent with prior findings

highlighting the role of mental pain intensity as a well-established predictor of suicidal risk (Levinger et al., 2015; Segal-Engelchin et. al, 2015; Shelef et al., 2015) and its relation to various psychiatric disorders, such as depression and anxiety (e.g., Orbach et al., 2004). Moreover, our results expand previous research, by revealing a positive association between mental pain intensity and COVID-19-related psychological distress, further supporting the conceptualization of mental pain intensity as a transdiagnostic construct related to a wide array of psychiatric conditions (Orbach et al., 2003; Tossani, 2013). Mental pain in the context of the pandemic could be viewed as a broader representation of the intra-subjective suffering and helplessness experienced by the general population (Lifshin et al., 2020).

As a second aim, we examined the role of tolerance for mental pain, a psychosocial resource, in protecting people from psychological distress and suicidal ideation during the pandemic and in buffering the adverse mental health repercussions of mental pain intensity. Results indicated that tolerance for mental pain was a powerful protective factor, as it was significantly associated with lower levels of psychological distress and suicidal ideation during the pandemic. Moreover, higher levels of tolerance for mental pain significantly weakened the link of mental pain intensity to psychological distress and suicidal ideation. Suicide prevention measures in the context of a pandemic should be a key priority (Niederkrotenthaler, Gunnell, et al., 2020; Moutier, 2021). This study empirically highlighted tolerance for mental pain as a resource that may be of particular importance (Gunnell et al., 2020). Being proactive in dealing with psychological suffering, increasing the ability to put the pain aside, and making efforts to keep it from overwhelmingly interfering with daily activities can be an invaluable psychological resource, especially during the current pandemic.

The current findings fit with previous research showing that higher tolerance for mental pain is predictive of less depressive symptomatology and reduced suicidal ideation (Landi, Furlani et al., 2020). Findings are also consistent with a recent study conducted on a US national sample of 10,368 adults during the COVID-19 pandemic in March 2020, in which depressive

symptomatology, previously associated with mental pain, was shown to be a significant predictor of suicidality, while psychological resources, previously associated with mental pain tolerance, functioned as a protective factor (Fitzpatrick et al., 2020). Results are also aligned with another study conducted during the first lockdown in a sample of 1,020 Spanish in which increased levels of fear of COVID-19, and lower interpersonal skills and resources – such as self-efficacy, social support, emotional self-regulation, etc. – were related to higher suicidal ideation (Soto-Sanz et al., 2020). Finally, the findings of this study are also in line with the broader literature highlighting positive psychological resources associated with resilience as important protective factors for adaptive psychological responses to the COVID-19 pandemic (Pakenham et al., 2020; Satici et al., 2020).

The results of the current study have numerous clinical implications. Because of the negative mental health impact of mental pain intensity during the COVID-19 lockdown and the adverse repercussions of previous epidemics on mental health and suicide (Zortea et al., 2020), it is important that public health interventions will be developed to bolster tolerance for psychological suffering during and after the COVID-19 outbreak. A recent study has further highlighted mental pain tolerance as associated with better psychotherapeutic outcomes, underlying the importance of implementing psychotherapeutic interventions during the current pandemic and reinforcing tolerance for mental pain within the interventions (Grossman-Giron et al., 2020).

Findings from the present study should be interpreted in the context of the following limitations. First, the online survey methodology and the exclusive reliance on self-report measures elevate the possibility of common-method variance. Second, the current cross-sectional design limits inferences regarding the direction of causality of the link of mental pain intensity and tolerance to psychological distress and suicidal ideation. Longitudinal studies are needed to investigate causal links among these variables over time. Third, the fact that our convenience sample was comprised mostly of female participants compromises the generalizability of our findings to male participants. Fourth, we measured suicidal ideation with a single item. Future

studies should use multi-item measures of suicidal ideation. Nevertheless, this study is the first to elucidate mental pain-suicidality risk and the protective role of tolerance for mental pain during the current COVID-19 pandemic.

Conclusion

Because of the alarming effects of the pandemic and lockdown on mental health and suicide (Bueno-Notivol et al., 2020; Dubé et al., 2021; Kan et al., 2021; Xiong et al., 2020) the current study underlines the protective role of tolerance for mental pain in reducing psychological distress and suicidal ideation during the pandemic. Evidence-based public health interventions focused on tolerance for mental pain during a pandemic are needed in order to effectively reduce suicide risk and promote resilience among the general population worldwide.

Compliance with Ethical Standards

Conflicts of Interest: The authors have no relevant financial or non-financial interests to disclose.

Ethical Approval: All procedures followed were in accordance with the ethical standards of a university institutional human research ethics committee and with the Helsinki Declaration of 1975, as revised in 2000. Informed consent was obtained from all participants for being included in the study.

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Table 1

Descriptive Data and Correlations between Mental Pain Intensity and Tolerance, Gender, Age,

Psychological Distress, and Suicidal Ideation.

	M (*SD*)	Range	COVID-19 Distress	Anxiety	Depression	Suicidal Ideation
Mental pain intensity	2.36 (0.79)	1–4.71	0.74***	0.71***	0.80***	0.46***
Tolerance for mental pain	3.84 (0.65)	1.80–5	–0.42***	–0.41***	–0.45***	–0.39***
Gender [a]	73.9%		–0.29**	–0.26**	–0.25**	–0.06
Age	34.03 (12.88)	18–74	–0.02	–0.17**	–0.18**	0.04

Notes. [a] Gender 0 = female, 1 = male. Pearson correlations are displayed for continuous variables and Spearman correlations for gender. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

Table 2

Moderation of Tolerance for Mental Pain in the Relationship between Mental Pain and

Psychological Distress and Suicidal Ideation.

Effects	COVID-19 Distress		Anxiety		Depression		Suicidal Ideation	
	Coeff. (*SE*)	95 % CI	Coeff. (*SE*)	95 % CI	Coeff. (*SE*)	95 % CI	Coeff. (*SE*)	95 % CI
MPI (*X*)	0.341***	0.309	0.188***	0.104	0.147***	0.134	0.074***	0.550
	(0.016)	0.373	(0.007)	0.131	(0.007)	0.160	(0.010)	0.942
TMP (*W*)	−1.249*	−2.315	−0.692**	−1.149	−0.752**	−1.181	−0.199***	−0.264
	(0.542)	−0.184	(0.233)	-0.235	(0.218)	−0.323	(0.003)	−0.133
X x *W*	**−0.043****	−0.073	**−0.023*****	−0.036	**−0.031*****	−0.044	**−0.007*****	−0.008
	(0.015)	−0.013	(0.007)	−0.010	(0.006)	−0.019	(0.001)	−0.005
Gender (*U₁*)	−3.117***	−4.571	−.923**	−1.548	−0.600*	−1.185	0.064	−0.026
	(0.740)	−1.663	(.318)	−0.299	(0.298)	−0.015	(0.046)	0.153
Age (*U₂*)	0.042	−0.007	−.021*	−0.042	−0.020*	−0.040	0.004**	0.001
	0.025	0.091	(.011)	0.000	(0.010)	−0.001	(0.002)	0.007
Constant	20.236***	18.416	7.902***	7.121	8.808***	8.075	9.982***	9.981
	(0.927)	22.056	(0.398)	8.683	(0.373)	9.541	(0.570)	9.983
R^2	0.612		0.541		0.666		0.361	
F(5, 646)	203.630***		152.363***		257.762***		72.914***	

Notes. Coeff. = unstandardized coefficient, *SE* = standard error, CI = 95% confidence interval, MPI (*X*) = mental pain intensity (independent variable), TMP (W) = tolerance for mental pain (moderator), U = covariate. Mental pain and tolerance for mental pain are mean-centered. Significant moderations are displayed in bold. R^2 = total variance explained by the model, *$p <$ 0.05, **$p <$ 0.01, ***$p <$ 0.001.

Figure Caption

Figure 1

The Buffering Effect of Tolerance for Mental Pain on the Link between Mental Pain and

Psychological Distress and Suicidal Ideation. *Notes.* SD = Standard Deviation.