

Mediating Effects of Self-criticism on the Relationship Between Perceived Burdensomeness and Suicidal Ideation

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Suicide among young adults is global social issue. Suicidal ideation is recognized to be a key predictor of suicide. According to the interpersonal theory of suicide (IPTs), suicidal ideation is associated with perceived burdensomeness. In interpersonal relationships, perceived burdensomeness as a distorted evaluation of one's value leads to self-criticism. Suicide is described as "arrested flight" in an evolutionary context and is explained as a way to escape from self-criticism. Thus, self-criticism may be a necessary risk factor for suicidal ideation. This study verified whether self-criticism (self-criticizing and self-attacking) mediates the relationship between perceived burdensomeness and suicidal ideation among young adults. The results showed that self-criticizing and self-attacking partially mediated the relationship between perceived burdensomeness and suicidal ideation, with self-attacking having a greater effect. Therapeutic interventions appropriate for the degree of self-criticism are required in clinical interventions and suicide prevention programs for young adults.

Keywords: perceived burdensomeness, suicidal ideation, self-criticism, interpersonal theory of suicide

Introduction

Suicide is a comprehensive concept that includes suicidal ideation, suicide attempt, and actual suicide. Of these, suicidal ideation refers to thoughts related to death, suicide, and self-harm. This means believing that suicide is a clear and acceptable solution to an individual's perceived situation or problem (Reynolds, 1998). Suicidal ideation is considered a predictive indicator of suicide attempt and actual suicide. The Institute of Medicine (2002) also emphasized that suicidal ideation should be considered a serious and dangerous problem that is equivalent to actual suicide behaviors.

Stress involving social factors can be fatal to individuals (Ferragud et al., 2010). Thus, it is important to explore the association between psychosocial problems and suicide. The interpersonal theory of suicide (IPTs) explains the value of an individual's existence in interpersonal relationships and suggests that two factors—thwarted belongingness (TB) and perceived burdensomeness (PB)—induce the desire to commit suicide (Joiner, 2009). In other words, the desire to commit suicide is triggered when people feel alienated and disconnected from social relationships and perceive themselves as incompetent, helpless, and burdensome to those around them.

With increasing empirical evidence for the IPTs, it has been verified that PB has a strong association with suicidal desire. For instance, PB is a consistently powerful and reliable predictor of suicidal desire compared to TB (George et al., 2017; Hill & Pettit, 2019), and is more resistant to change than TB following treatment (King et al., 2018). Therefore, clinicians and researchers alike should consider PB important in understanding and treating people with suicidal thoughts.

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PB consists of two dimensions: burden on others and hatred for oneself (Van Orden et al., 2010). When an individual becomes frustrated by their desire to contribute meaningfully to others, they consider themselves helpless and incompetent and assume the blame themselves. By contrast, people who are frustrated with their belongingness also feel resentment toward those who isolate them, meaning the target of attack is divided toward themselves and others (Buckley et al., 2004; Dewall et al., 2009). In general, internal attribution in relation to negative events can lead to depression and suicidal ideation (Baumeister, 1990). Thus, PB results in self-assessment that identifies the self as inappropriate, as well as experiencing more negative self-directed emotions, which can lead to suicidal desire.

Self-criticism may be related to the process by which PB induces suicidal desire. Self-criticism is representative of dysfunctional beliefs, which are the result of a negative evaluation of oneself (Choi et al., 2013). Findings from a study with a large community sample show that PB is strongly related to self-criticism (Turnell et al., 2019). In addition, increased PB levels predict increased depression, negative self-perception, and decreased self-efficacy (Kowal et al., 2012). Increased levels of PB can also cause self-aggression and self-criticism, because PB is a distorted self-evaluation that damages closed people due to a lack of perceived ability of the self (Joiner, 2009; Van Orden et al., 2010).

Multiple previous studies have verified the association between self-criticism and suicidal desire (Falgares et al., 2017; O'Connor & Noyce, 2008). Gilbert and Allan (1998) described suicide as "arrested flight" in an evolutionary context and suggested that it was influenced by negative evaluation of oneself and difficulty in solving problems. Furthermore, Baumeister (1990) explained that suicide is a way to escape from self-hatred induced by the internalization of failure. In this context, self-criticism can act as a persistent stressor, and for some people, ruthless self-attacks can lead to suicidal desires. Indeed, self-critical individuals showed more suicidal intentions to escape from either their perceived failure to achieve or thwarted needs. Moreover, they attempted suicide with a higher probability, and finally committed suicide (Fazaa & Page, 2003).

Self-criticism consists of two concepts: self-criticizing (SC) and self-attacking (SA) (Gilbert et al., 2004), where SC refers to self-inadequacy, which is related to incompetence and inferiority based

on mistakes or inadequacies. SA refers to self-harm, which is related to feeling resentment and disgust at oneself and wanting to destroy oneself. The two factors of self-criticism are fundamentally associated with maladaptation, although SC is also responsible for self-correcting functions by reflecting on one's mistakes or inadequacies and correcting future errors (Driscoll, 1989). By contrast, SA functions to persecute and abuse the self, which can lead to helplessness, hopelessness, and defeat (Sloman, 2008).

Castilho et al. (2016) suggested that SC and SA have different patterns of influence on the psychopathological symptoms. Specifically, SA predicted all psychopathological variables such as depression, anxiety, and stress, but SC only predicted stress. This may be explained by the effects of the self-monitoring and self-correcting functions of SC, suggesting that SC and SA have distinct influence. The current study thus assumes that SC and SA are related to suicidal desire as sub-factors of self-criticism, although SA is closer to suicidal desire and suicide than SC.

Taken together, PB causes individuals to make distorted evaluations of their own values. Subsequently, the process of self-criticism based on distorted self-evaluations gives rise to a suicidal desire. Since self-criticism has distinct functions in this process, it is suggested that the process should be verified according to the subdivisions of SC and SA. Therefore, the current study aims to test a mediational model where self-criticism is a mediator between the predictor variable PB and the outcome variable suicidal ideation, and determine whether there are different indirect effects of SC and SA.

Methods

Procedure

All Participants were recruited online. Participants completed an online survey via Google Forms and were rewarded with compensation. Through the online survey, all participants were given basic information, including instructions and an overview of the study. After providing informed consent, participants were able to continue with the survey, and were informed that they could withdraw at any time. The entire procedure was approved by the Institutional Review Board (Approval No. 1041078-202208-HR-171) and adhered to the Declaration of Helsinki.

Participants

A total of 344 participants were recruited from Korea: 32.0% were men ($n = 110$) and 68.0% were women ($n = 234$). The participants' ages ranged from 18 to 29 years, and the mean age was 22.42 years ($SD = 3.28$). More than half of the participants resided in Seoul Metropolitan Area.

Measures

The Korean Version of the Interpersonal Needs Questionnaire—Revised (K-INQ-R), Perceived Burdensomeness Subscale
The INQ-R is a self-report scale modified by Van Orden (2009) on the INQ based on the IPTS. The current study used the perceived burdensomeness subscale consisting of 16 items rated on a 7-point Likert scale, with a total score ranging from 16 to 112. The Korean version was translated by Cho (2010). The perceived burdensomeness subscale showed good internal consistency in the original studies by Van Orden (2009) and Cho (2010), with values of $\alpha = .89$ and $\alpha = .95$, respectively. The internal consistency indicated in the current study was .89.

The Korean Version of the Beck Scale for Suicide Ideation (K-BSSI)

The Beck Scale for Suicide Ideation (BSSI) is a self-report scale developed by Beck et al. (1979) to measure the presence and intensity of suicide ideation. It is a 19-item scale, and each item is rated based on an ordinal scale from 0 to 2, with a total score ranging from 0 to 38. Individual responses to the first five items are excerpted. If an individual's response to the fifth item is positive (score of 1 or 2), they answer the rest of the items, while if the fifth item is not positive the questionnaire is completed. The Korean version was translated and validated by Lee and Kwon (2009). The BSSI showed appropriate internal consistency in Lee and Kwon (2009) with a value of $\alpha = .74$. The internal consistency indicated in the current study was .89.

The Korean Version of the Form of Self-Criticizing/attacking and Self-reassuring Scale (K-FSCRS), Self-Criticizing/self-attacking Subscale

The FSCRS is a self-report scale developed by Gilbert et al. (2004) to measure levels of self-criticism and self-reassurance. The current

study used the SC and SA subscales consisting of 6 items and 4 items, respectively. Each item is rated on a 5-point Likert scale with a total score ranging from 6 to 30 (SC) and from 4 to 20 (SA). The Korean version was translated and validated by Cho (2011). The SC and SA subscales showed acceptable internal consistency in Cho (2011), with the values $\alpha = .86$ and $\alpha = .72$, respectively. Internal consistency indicated in the current study was .87 and .85, respectively.

Data Analysis

Data from 344 participants were used for the final analysis (with 2 insincere responses excluded). Data analysis was conducted using IBM SPSS (v.26.0). The internal consistency of each measurement was calculated using Cronbach's α coefficient. Pearson's correlations were calculated for PB, SC, SA, and suicidal ideation. Mediation analysis was conducted to investigate: (1) SC as a mediator between PB and suicidal ideation; (2) SA as a mediator between PB and suicidal ideation. The PROCESS Macro (v.4.1) Model 4 (Hayes, 2022) was used to examine a parallel mediation model with two potential mediators (SC and SA) in the relationship between PB and suicidal ideation. The indirect effect was tested using 95% confidence interval and 5000 bootstraps resamples for percentile bootstrapping.

Results

Descriptive Statistics

The descriptive statistics are presented in Table 1. Most participants were either single or not married (97.4%) and either attending or had attended university (82.6%). The mean scores were as follows: PB was 41.46 ($SD = 14.19$), SC was 20.39 ($SD = 5.85$), SA was 9.26 ($SD = 4.14$), and suicidal ideation was 7.33 ($SD = 5.97$). According to the suicidal ideation severity levels based on previous research (Shin, 1993), 105 individuals (30.52%) reported suicidal ideation requiring clinical attention. More specifically, 27 participants were classified as "moderate" (7.85%), 29 participants were "severe" (8.43%), and 49 participants were "extreme" (14.24%).

Correlations

The correlation results are presented in Table 2. All correlation coefficients between variables were significant. Specifically, PB was

Table 1. Descriptive Statistics of the Sample

Variable	N (%)
Sex	
Male	110 (32.0)
Female	234 (68.0)
Age (yr)	
M	22.42
SD	3.28
Education	
High school graduate	36 (10.5)
College	9 (2.6)
University	284 (82.6)
Postgraduate	15 (4.4)
Marriage status	
Single or not married	335 (97.4)
Married	9 (2.6)
Separated or widowed	-
Suicidal ideation	
Nonexistent or mild	239 (69.48)
Moderate	27 (7.85)
Severe	29 (8.43)
Extreme	49 (14.24)

Table 2. Means, Standard Deviations, and Correlations between Key Variables

Variable	M	SD	1	2	3	4
1 PB	41.46	14.19				
2 SC	20.39	5.85	.532***			
3 SA	9.26	4.14	.729***	.665***		
4 Suicidal Ideation	7.33	5.97	.568***	.499***	.633***	

PB = Perceived Burdensomeness, SC = Self-Criticizing, SA = Self-Attacking.
 *** $p < .001$.

significantly positively correlated with suicidal ideation ($r = .568, p < .001$), SC ($r = .532, p < .001$), and SA ($r = .729, p < .001$). SC was significantly positively correlated with SA ($r = .665, p < .001$), and suicidal ideation ($r = .499, p < .001$). SA was significantly positively correlated with suicidal ideation ($r = .633, p < .001$).

Mediation Analysis

The results of the direct effect between variables in the mediation model are shown in Table 3. These results indicate that PB positively predicted SC ($B = .219, p < .001$), and SC positively predicted suicidal ideation ($B = .125, p < .05$). Likewise, PB positively predicted SA ($B = .213, p < .001$), and SA positively predicted suicidal ideation

Table 3. Results of Direct Effect between Variables in the Mediation Model

Outcome Variables	Predictor Variables	Direct Effect			Boot 95% CI	
		B	S.E.	t	LLCI	ULCI
SC	PB	.219	.019	11.626***	.182	.257
SA	PB	.213	.011	19.700***	.191	.234
Suicidal Ideation	PB	.091	.025	3.599***	.041	.140
	SC	.125	.056	2.233*	.015	.235
	SA	.569	.098	5.808***	.376	.762

PB = Perceived Burdensomeness, SC = Self-Criticizing, SA = Self-Attacking.
 * $p < .05$, *** $p < .001$.

Table 4. Results of Total Effect and Direct Effect of Perceived Burdensomeness on Suicidal Ideation

	B	S.E.	t	Boot 95% CI	
				LLCI	ULCI
Total effect	.239	.019	12.772***	.202	.276
Direct effect	.091	.025	3.599***	.041	.140
Model summary	$R^2 = .323, F(1, 342) = 163.135***$				

*** $p < .001$.

Table 5. Results of Indirect Effect of Self-Criticizing and Self-Attacking

Indirect Effect	Effect Size	Boot S.E.	Boot 95% CI	
			LLCI	ULCI
Total	.148	.024	.102	.199
SC	.027	.013	.001	.053
SA	.121	.029	.066	.180

SC = Self-Criticizing, SA = Self-Attacking.

ation ($B = .569, p < .001$).

The results of total effect and direct effect of PB on suicidal ideation are shown in Table 4. The total effect of the relationship between PB and suicidal ideation in the absence of the mediators was significant $B = .239$ (95% bootstrap CI = [.202, .276]). The direct effect of the relationship between PB and suicidal ideation, controlling for self-criticism (SC and SA) was still significant at .091 (95% bootstrap CI = [.041, .140]).

The results of the indirect effect of SC and SA are shown in Table 5. The indirect effects were significant, through SC .027 (95% bootstrap CI = [.001, .053]), and SA .121 (95% bootstrap CI = [.066, .180]). The difference of indirect effects (SC-SA) was significant ($B = -.094, \text{Boot S.E.} = .038, 95\% \text{ bootstrap CI} = [-.171, -.020]$). Thus, while both self-criticism dimensions partially mediate the

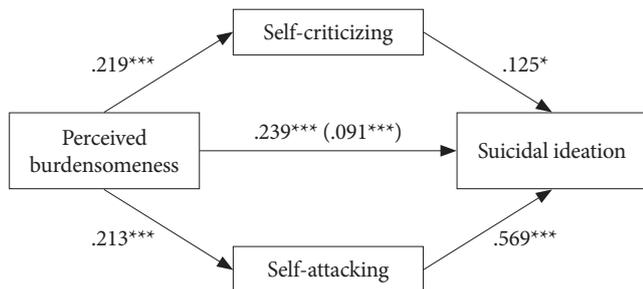


Figure 1. Mediation of perceived burdensomeness and suicide ideation by self-criticizing and self-attacking. * $p < .05$, *** $p < .001$.

relationship between PB and suicidal ideation, with SA exerting a greater effect, PB still independently influences suicidal ideation (Figure 1).

Discussion

The current study examined whether SC and SA mediated the effect of PB on suicidal ideation among 344 young adults in South Korea. As hypothesized, the mediating effects of SC and SA were significant. First, all correlation coefficients between PB, SC, SA, and suicidal ideation were significant, and all showed positive correlations with each other. This result is consistent with previous studies reporting the association between key variables (Fazaa & Page, 2003; George et al., 2017; Turnell et al., 2019).

Second, a major finding of the present study was that PB exerted its effect on suicidal ideation via SC and SA as mediators. Namely, we found that higher levels of PB were associated with higher levels of self-criticism, which may lead to higher suicidal ideation. This is in line with a previous study that shows how more individuals with high PB commit suicide when they blame themselves than when they understand and care for themselves during painful moments (Rabon et al., 2019). Furthermore, this finding is consistent with Joiner’s argument that the perceived (distorted) thoughts of being a burden to others and having hatred of oneself can lead to self-criticism, which can cause suicidal ideation (Joiner, 2009). Therefore, this suggests that many people with high PB tend to distort and devalue their self-worth in interpersonal relationships, and such continuous self-criticism can eventually give rise to suicidal desire.

Third, SA exerted a greater effect than SC on the association be-

tween PB and suicidal ideation. Although SC and SA are the two sub-factors of self-criticism, SA may be more important in terms of the effect of PB on suicidal ideation because it only functions as persecution and self-abuse (Sloman, 2008), while SC also functions as self-correction (Driscoll, 1989). Similar to our result, a study by Castilho et al. (2016) found that both variables (SC and SA) had different patterns of influence on psychopathological symptoms, and SA acted as a more mortal factor for mental health than SC did.

The implications of the current study are as follows. First, this study provides specific information on the association between PB and suicidal desire by comprehensively verifying PB, suicidal ideation, and self-criticism. Most studies on PB have focused on “responsibility,” while few have explored self-hatred (e.g., self-blame, self-criticism, or self-attack) as an indicator of suicide, so there is a lack of discussion about the process of PB leading to suicide. The current study explains the mechanism by which PB leads to suicidal desire in the context of self-criticism by verifying the mediating effects of SC and SA on the relationship between PB and suicidal ideation. This provides specific evidence that PB experienced in relationships with others can affect suicidal desire under the influence of SC and SA at the personal level.

Second, the results of the present study strengthen the explanation that although there is a close relationship between SC and SA, self-correcting functions are dominant in SC and self-abuse functions are dominant in SA (Gilbert et al., 2004). In other words, there are many parts that are shared between SC and SA, but there are parts that are independent of each other, and it is those independent parts that are related to suicidal ideation. These results suggest that there is a need for therapeutic intervention appropriate to the level of self-criticism by classifying those exhibiting self-criticism into two independent groups in clinical intervention. For example, for those with strong SC, treating cognitive corrections to their distorted values in interpersonal relationships as a therapeutic focus, and for those with strong SA, helping them fully experience and strengthen self-compassion, such as compassion focused therapy (CFT). This will contribute to the reduction of suicidal desire.

Third, the current study verified the mechanism between PB and suicidal desire among young adults. In early adulthood, they are pressured to break out of adolescence, modify patterns of social interaction, and experience extended interpersonal relationships.

Since these burdens and stresses may lead to fatal psychological problems such as suicide (Cerbone & Larison, 2000), clinical attention is needed on the effects of stress caused by interpersonal relationships in young adults. Thus, the current study provides a theoretical basis for interventions that can contribute to the reduction of suicidal desire in early adulthood by identifying the process by which suicidal desire is triggered when young adults experience frustration in interpersonal relationships as well as verifying changeable variables that can affect the process.

The interpretation of our results is limited in that the current study was not conducted on a clinical group and the results were derived using cross-sectional data. In future studies, it is necessary to classify the suicide risk group and to apply various methodologies such as longitudinal and experimental designs to identify inferences of the causal relationships between variables. Another limitation is that the present study focused only on suicidal ideation. As PB and self-criticism have been found to be factors that significantly affect suicidal ideation, studies considering other suicide-related behaviors should be conducted. This will expand on the results of this study by identifying in-depth the effect of PB and self-criticism on suicide. Finally, the effect of stress, which includes social factors, is likely to vary by gender. In this study, the possibility of these differences was not considered; however, in future studies, it will be necessary to conduct an analysis by classifying samples by gender. Since gender differences have been reported in the patterns or results of suicidal ideation and suicidal behavior, the results of this study will be concretized through future studies that consider gender differences.

In conclusion, the current study investigated whether SC and SA indirectly affect the association between PB and suicidal ideation. Consequently, it was found that SC and SA partially mediated the relationship, and SC in particular was found to be a more significant variable. These findings provide a theoretical explanation for suicide among young adults, which is a serious social issue today. Furthermore, it provides empirical evidence for effective suicide prevention programs.

Author contributions statement

SIK, a graduate student at Chung-Ang University, conceptualized

the research, collected and analyzed the data, and wrote the original draft of the manuscript. MHH, a professor at Chung-Ang University, served as the principal investigator for the research grant, supervised the research process, and reviewed and edited the manuscript. All the authors provided critical feedback, participated in the revision of the manuscript, and approved the final submission.

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