

Development of a Predictive Model for Suicidal Tendency in Individuals with Borderline Personality Disorder Based on Thwarted Belongingness, Perceived Burdensomeness, and Acquired Capability for Suicide: Testing Joiner's Model

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ABSTRACT

Objective: The aim of the present study was to predict suicidal tendency in individuals with borderline personality disorder based on thwarted belongingness, perceived burdensomeness, and acquired capability for suicide, as per the Joiner model.

Methods and Materials: The research method was correlational, utilizing structural equation modeling (SEM) to analyze the structural relationships. The study population comprised all male and female adults aged 18 to 40 years who visited psychiatric wards and clinics in Tehran during 2021, were diagnosed with borderline personality disorder, and had a history of suicide attempts, suicidal tendency, or suicidal thoughts as determined by screening questions. The sampling was done purposefully through patient screening. According to Kline's theory for SEM designs, the sample size was 500 participants. Suicidal tendency was assessed using the Beck Scale for Suicide Tendency (BSSI), acquired capability for suicide was measured using the Suicide Behaviors Questionnaire-Revised (SBQ-R), and perceived burdensomeness was assessed using the Interpersonal Needs Questionnaire (INQ). Data analysis was performed in SPSS and AMOS using SEM.

Findings: The results of the structural equation analysis indicated that the proposed research model had an acceptable fit, and the model predicting suicidal tendency in individuals with borderline personality disorder through thwarted belongingness, perceived burdensomeness, and acquired capability for suicide, as per Joiner's model, was confirmed. Additionally, the secondary results showed that among these variables, acquired capability for suicide played the most significant role in suicidal tendency in individuals with borderline personality disorder. The direct effect of thwarted belongingness, or the experience of

alienation from others, on suicidal tendency was approximately 0.23, the effect of perceived burdensomeness was approximately 0.26, and the effect of acquired capability for suicide on suicidal tendency in individuals with borderline personality disorder was approximately 0.28. Consequently, a total of 0.78% of the variance in suicidal tendency in affected individuals can be explained by these three variables, which are the variables of Joiner's model.

Conclusion: Thus, the interpersonal theory of suicide proposed by Joiner was confirmed in individuals with borderline personality disorder who participated in this study.

Keywords: *Belongingness, Perceived Burdensomeness, Suicide, Borderline Personality Disorder.*

1. Introduction

The term "suicide" is derived from the combination of the word "sui," meaning self, and "cide," meaning killing (Aouidad et al., 2020). Accordingly, suicide refers to the act of killing oneself through any behavior initiated by the individual with the intent or expectation of their own death (Roush, 2018). Suicide is a multifaceted self-harm behavior and is considered one of the major concerns in mental health (Briones-Buixassa et al., 2021). Clinically, it is assumed that suicide exists across all groups, but its prevalence is higher among those with borderline personality disorder (BPD) (Doost Mohammadi & Rezaeian, 2020). This may be because characteristics such as emotional instability, inability to solve problems, lack of coping strategies for dealing with acute stressors, inflexibility, and limited resilience in individuals with BPD contribute to their increased risk of suicide (Titus & DeShong, 2020).

Given the ambiguities related to the complexities in explaining the phenomenon of suicide among patients with personality disorders, the present study focuses on individuals with BPD due to the extensive scientific reports indicating a direct correlation between the occurrence of suicide and BPD. Moreover, explaining suicide attempts in those who often engage in such behavior to attract attention or manipulate others (Rogers & Joiner Jr, 2016) is particularly important in individuals with BPD. Another reason for selecting BPD is that, although this disorder represents pervasive impairment, such as instability in interpersonal relationships, self-concept, emotions, and significant impulsivity, and is characterized by symptoms such as efforts to avoid real or imagined abandonment, unstable interpersonal relationships, identity disturbance, impulsivity, recurrent suicidal behavior or self-mutilation, emotional instability, chronic feelings of emptiness, and intense anger (Aouidad et al., 2020; Briones-Buixassa et al., 2021; DeShong & Tucker, 2019; Donyavi et al., 2015;

Rogers & Joiner Jr, 2016; Titus & DeShong, 2020), no successful models have been developed to explain and prevent suicide in individuals with BPD (Eades, 2016). The high prevalence of suicide in individuals with BPD indicates the inadequacy of existing models in explaining and predicting suicide for this population (DeShong & Tucker, 2019). Therefore, there is a need for new models to explain the causes of suicide in individuals with BPD.

In this regard, despite various studies on explaining suicide, ambiguities and questions remain about the etiology of the high rate of suicide attempts in specific groups, especially individuals with BPD. Although theorists in the 20th century have sought to explain suicide, in recent years, researchers and psychologists have conducted extensive studies on the causes of suicide in the general population, particularly in psychiatric patients (Aouidad et al., 2020; Briones-Buixassa et al., 2021; DeShong & Tucker, 2019; Donyavi et al., 2015). However, there is no specific theory that comprehensively explains suicide in individuals with BPD.

For instance, Durkheim (1951) emphasized the role of social isolation in suicide, and Shneidman (1985) considered suicide a response to overwhelming psychological pain (Chu et al., 2017). Baumeister (1991) defined suicide as an escape from a depressed state, and Abramson (2000) emphasized the role of hopelessness and helplessness in suicide (Hopelessness Theory) (Briones-Buixassa et al., 2021). Nevertheless, a significant advancement in suicide theories occurred in the recent century when Joiner proposed the Interpersonal Theory of Suicide (2005) (Kiani Chelmardi et al., 2019). Joiner's theory comprehensively addresses the bidirectional interaction between intrapersonal dynamic systems and interpersonal risk factors, positing that the severe risk of suicide arises from the interaction of three elements: the experience of loneliness and social isolation (thwarted belongingness), the individual's perception of being a burden to others (perceived burdensomeness), and

the habituation to self-harm aimed at non-suicidal self-injury (acquired capability) (Berto, 2021).

Given this necessity, the present study represents an innovation by focusing on the potential to test Joiner's Interpersonal Theory of Suicide in predicting suicidal tendency in individuals with BPD. Furthermore, by examining the three components of Joiner's Interpersonal Theory as predictor variables in explaining suicidal tendency in individuals with BPD, the study contributes a novel approach to understanding suicide in this population. This model can go beyond simple and direct relationships between these variables and the symptoms of BPD, identifying the combined effects of the three elements of Joiner's theory in predicting suicidal tendency in a clinical population of individuals with BPD (Rogers & Joiner Jr, 2016). This understanding could help clarify the multiple factors influencing suicidal tendency in these individuals, as identifying the effective variables in those with BPD who attempt suicide could be beneficial.

Therefore, considering the identified gaps in explaining suicidal tendency in individuals with BPD, there is a need to identify the complex processes and pathways from tendency to action. By integrating the three components of Joiner's Interpersonal Theory in a population of individuals with BPD, who are among the highest-risk groups for suicidal tendency and attempts, we can develop a comprehensive model.

2. Methods and Materials

2.1. Study Design and Participants

The research method was correlational, utilizing structural equation modeling (SEM) to analyze the structural relationships. The fit of the designed model was assessed using data obtained from the research sample. The study population included male and female adult patients aged 18 to 40 years who were diagnosed with BPD by a psychiatrist based on DSM-V criteria and who visited hospitals and psychiatric clinics in Tehran during 2021. The sampling was purposeful, adhering to the inclusion criteria of having BPD and a history of suicidal tendency, suicide attempts, or suicidal thoughts, as assessed by the Suicidal Tendency Questionnaire. The sample size for the study was approximately 500 individuals, determined based on Kline's theory. To achieve this sample size, 550 questionnaires were distributed and collected, and after excluding incomplete questionnaires, 500 complete questionnaires were analyzed.

2.2. Measures

2.2.1. Suicide Tendency

Beck Scale for Suicide Ideation (BSSI) was developed by Aaron Beck in 1961 and consists of 19 items and 3 subscales: 1) Desire for Death (5 items), 2) Preparation for Suicide (7 items), and 3) Actual Suicidal Intent (4 items). The questions assess the individual's readiness to attempt suicide on a three-point scale (0 to 2), with the total score ranging from 0 to 38. The questionnaire has high reliability, with Cronbach's alpha coefficients ranging from 0.87 to 0.97. In Iran, the reliability of the questionnaire was found to be 0.95 using Cronbach's alpha and 0.75 using the split-half method (Donyavi et al., 2015). The validity and reliability of this questionnaire have also been evaluated, showing a correlation of 0.76 with the Goldberg Depression Scale, indicating internal consistency, test-retest reliability, and concurrent validity.

2.2.2. Acquired Capability for Suicide

Suicide Behaviors Questionnaire-Revised (SBQ-R) was developed by Osman et al. in 2001 and consists of 4 items assessing suicidal thoughts and behaviors over the lifetime, suicidal thoughts in the past year, threats of suicide, and the likelihood of suicide in the future. The four six-point items range from 0 (never) to 6 (very likely). A higher score indicates a greater likelihood of suicide. The maximum possible score on the SBQ-R is 24. The original study (Osman et al., 2001) demonstrated high convergent validity and adequate diagnostic sensitivity in distinguishing between suicidal and non-suicidal individuals, with acceptable internal consistency ($\alpha = 0.80$). In Iran, the study by Kiani Chelmardi, Rashid, and Ramazani (2018) confirmed the internal consistency of the questionnaire with a Cronbach's alpha of 0.80 (Kiani Chelmardi et al., 2019).

2.2.3. Thwarted Belongingness and Perceived Burdensomeness

For this study, another standard measurement tool that could be used is the Interpersonal Needs Questionnaire (INQ), developed by Joiner and colleagues. This self-report questionnaire is designed to measure thwarted belongingness and perceived burdensomeness—two central constructs of the Interpersonal Theory of Suicide. The INQ consists of multiple items that assess the individual's perceptions of social isolation, loneliness, and the belief that they are a burden to others. The questionnaire has been

validated across diverse populations and has demonstrated strong reliability and validity (Chu et al., 2017; Eades, 2016; Espinosa-Salido et al., 2021; Roush, 2018; Van Orden et al., 2012).

2.3. Data analysis

Data analysis was conducted using SPSS for descriptive statistics and AMOS for hypothesis testing using SEM. SEM was chosen due to its superiority over least squares techniques, its ability to evaluate the adequacy of theoretical models, compare models, and estimate model parameters across different groups (Quintana & Maxwell, 1999). In this study, model fit was assessed using the maximum likelihood method for model estimation and the following fit indices: Chi-square (χ^2), Chi-square to degrees of freedom ratio (χ^2/df), Comparative Fit Index (CFI), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), and Root Mean Square Error of Approximation (RMSEA). A value greater than 0.90 for CFI, GFI, and AGFI and a value less than 0.06 for RMSEA and Chi-square indicate a good model fit.

3. Findings and Results

The findings from the demographic data of the study indicated that the highest frequency of age groups among the participants was in the 31-40 years age range, with 168 individuals representing approximately 34% of the total sample. In contrast, the 41-50 years age group had the lowest frequency, with 53 individuals, representing the smallest portion of the sample. Regarding gender, it was found that women constituted approximately 41% of the total sample, while men accounted for about 36%, with approximately 20% not responding. In terms of the duration of illness, the most common duration of borderline personality disorder was 7 years, with 92 individuals, representing about 18% of the total sample. In contrast, a duration of 1 year was reported by only 23 individuals, accounting for approximately 5% of the sample. Regarding the number of suicide attempts, the most frequent was 4 attempts over a lifetime, reported by 130 individuals, accounting for approximately 26% of the sample. In contrast, 7 and 8 suicide attempts were reported by only 10 individuals, representing about 2% of the total sample.

Table 1

Descriptive Statistics and Kolmogorov-Smirnov Test Results for Normality of Research Variables

Variable	Suicidal Tendency	Thwarted Belongingness	Acquired Capability for Suicide	Perceived Burdensomeness
N	500	500	500	500
Mean	21.936	25.484	17.494	21.98
Std. Dev.	5.5885	9.77142	4.4277	6.933
Z	1.305	2.165	1.596	1.430
p-value	.066	.070	.129	.331

As shown in Table 1, considering the significance level of the Z scores obtained from the Kolmogorov-Smirnov test, it can be stated that none of the research variables had a

significant difference from the normal distribution. Therefore, parametric statistical tests could be used for data analysis based on this lack of significant difference.

Table 2

Correlation Coefficients Between Research Variables in the Study Sample

Variables	Suicidal Tendency	Thwarted Belongingness	Perceived Burdensomeness	Acquired Capability for Suicide
Suicidal Tendency	Pearson Correlation	1	.603	.580
	Sig. (2-tailed)	-	.000	.000

Based on the results of the Pearson correlation test in Table 2, it can be stated that there was a significant relationship between all research variables. As a result, the first condition for data analysis using structural equation modeling (SEM) was met. Consequently, based on the significant simple relationship between the research

variables, the proposed model examining the effect of perceived burdensomeness and acquired capability for suicide on suicidal tendency through thwarted belongingness in individuals with borderline personality disorder was tested. The model fit was assessed through structural equation modeling. The results related to the fit

indices of the research model are summarized and explained as follows:

The summary of results from the assessment of the fit indices of the research model indicates that most indices demonstrated acceptable fit, confirming the reliability of the correlations between variables in the proposed model.

Chi-Square (χ^2): In the present study, the chi-square value was 6.9, which was significant at the level of $p < .001$. Although it should not be significant, due to the large sample size of 500, its significance is considered acceptable.

Chi-Square Ratio (χ^2/df): According to the results in Table 3, the chi-square ratio in this study was 6.9, which is greater than 5, indicating an acceptable fit for the research model (Figure 1).

Root Mean Square Error of Approximation (RMSEA): The value of this index was .03, indicating a good fit for the model in Figure 1.

Goodness of Fit Index (GFI): The value of this index was .90, indicating the good fit of the final model.

Adjusted Goodness of Fit Index (AGFI): The value of this index was .86, which is considered acceptable.

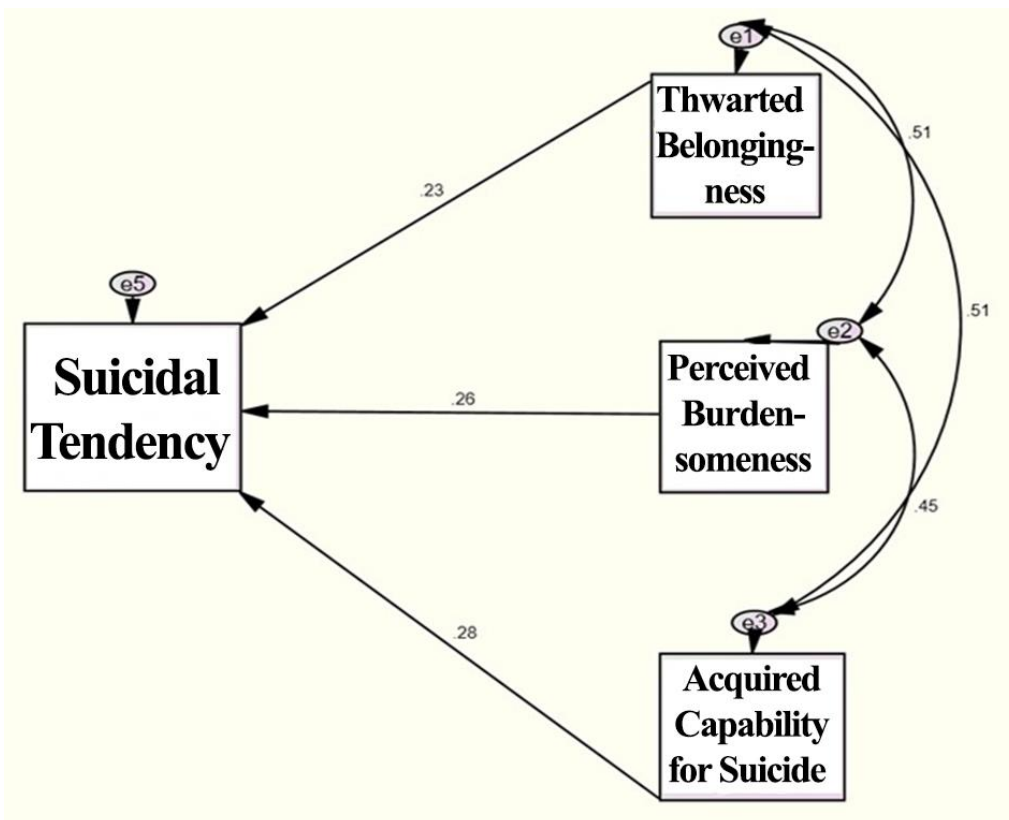
Incremental Fit Index (IFI) and Comparative Fit Index (CFI): The IFI was .90, and the CFI was also .90, indicating a good fit for the final model (Figure 1).

Bentler-Bonett or Normed Fit Index (NFI): The value of this index was .90 in the present study, indicating a good fit for the final model (Figure 1).

Based on the above indices, it can be concluded that the research model, which includes the relationship between thwarted belongingness, perceived burdensomeness, and acquired capability for suicide with suicidal tendency in individuals with borderline personality disorder, has an acceptable fit and was confirmed. Therefore, the results in Figure 1 can be considered reliable.

Figure 1

Proposed Model of the Effect of Thwarted Belongingness, Perceived Burdensomeness, and Acquired Capability for Suicide on Suicidal Tendency in Individuals with Borderline Personality Disorder



As shown in Figure 1, the proposed model for explaining the effect of thwarted belongingness, perceived burdensomeness, and acquired capability for suicide on

suicidal tendency in individuals with borderline personality disorder demonstrated that all predictor variables played a significant role in suicidal tendency. However, to specify the

direct role of each variable on suicidal tendency, the regression coefficients in Table 3 are used as detailed below.

Table 3

Regression Coefficients from Structural Equation Modeling Between Research Variables

Predictor Variables	Dependent Variables	Estimate	SE	CR	p
Thwarted Belongingness	Suicidal Tendency	.230	.025	5.27	.001
Perceived Burdensomeness	Suicidal Tendency	.263	.034	6.25	.01
Acquired Capability for Suicide	Suicidal Tendency	.278	.057	6.60	.001

Given the probability values in the column of Table 3, which indicate the significance levels of the effect coefficients between variables, it can be concluded that the direct effect of thwarted belongingness on suicidal tendency is $B = .230$, and the direct effect of perceived burdensomeness on suicidal tendency is $B = .263$, both significant at the $p = .01$ level. Additionally, the direct effect of acquired capability for suicide, with a high effect size of $B = .287$, was significant at the $p = .001$ level.

As a result, based on the above findings, it can be concluded that with an increase in thwarted belongingness or the experience of alienation from others, approximately 23% is added to the level of suicidal tendency in individuals with borderline personality disorder. Similarly, with an increase in perceived burdensomeness among the research participants, approximately 26% is added, and with an increase in acquired capability for suicide, approximately 28% is added to the level of suicidal tendency in individuals with borderline personality disorder. Consequently, a total of 78% of the variance in suicidal tendency in affected individuals can be explained through these three variables, which are part of Joiner's model. Therefore, the interpersonal theory of suicide proposed by Joiner was also confirmed in individuals with borderline personality disorder.

4. Discussion and Conclusion

The results of this study showed that the three variables of Joiner's theoretical model on suicide, including thwarted belongingness, perceived burdensomeness, and acquired capability for suicide, have a direct relationship with suicidal tendency in individuals with borderline personality disorder. Among them, the variable of acquired capability for suicide played the most significant role in suicidal tendency in individuals with borderline personality disorder. Therefore, the interpersonal theory of suicide proposed by Joiner was confirmed in individuals with borderline personality disorder who participated in this study.

Based on these findings, it can be argued that a low sense of belongingness, or the experience of alienation from others, may have formed during childhood or the attachment phase and may chronically exist in individuals with borderline personality disorder, who experience significant relational difficulties. However, when faced with problems, perceived burdensomeness and attributing these problems to oneself may lead to the desire to eliminate oneself and the formation of suicidal tendency. As a result, a pessimistic attributional style intensifies the neutral sense of belongingness and leads to suicidal thoughts or desires. This is because such individuals perceive problems as internal, stable, pervasive, or unsolvable.

This finding aligns with previous research results. For example, a study found that self-destructive behaviors and self-injury, which are common in borderline personality disorder, are associated with higher levels of thwarted belongingness, perceived burdensomeness, and suicidal thoughts (Chu et al., 2017). Therefore, in explaining the effect of thwarted belongingness on suicidal tendency, it can be argued that belongingness reflects a sense of low attachment and the belief that one is separate from others and does not belong to a family, group of friends, or a specific group. The lack of belongingness in individuals with borderline personality disorder causes harmful effects on cognition and behavior, such as deficits in self-regulation, executive functioning, reduced social behaviors, aggressive behaviors, and hostile biases in social-cognitive processing, leading to unintentional self-destructive behaviors and a state of inner numbness (Branley-Bell et al., 2019).

Furthermore, in explaining these results based on Joiner's suicide model, it can be stated that this model is based on painful social experiences and interpersonal relationships. Adaptive interpersonal relationships satisfy the need for belonging and emotional nourishment, and the social support derived from them can act as a buffer against negative life pressures. This is because having self-esteem, appropriate empathy with others, self-assertion, and impulse

control are components that increase coping ability, improve social relationships, and lead to problem-solving through appropriate means rather than inappropriate ones such as suicide (Espinosa-Salido et al., 2021).

Additionally, problems related to belongingness deficits can affect individual and social commitments, leading to issues in personal and social health. When social relationships are severed, the ability to regulate and manage behavior is also lost. The lack or absence of social relationships, resulting from poor social adaptation, can negatively impact individuals' motivation to live and increase the desire for suicide (Joiner Jr & Silva, 2012; Joiner Jr et al., 2009).

The key point in explaining the effect of thwarted belongingness on suicidal tendency is that emotions, in addition to being intrapersonal phenomena, also have interpersonal and communicative aspects. For example, emotions such as anger, guilt, and loneliness manifest in social life, and social theorists should consider the adaptive functions of emotions, particularly in the context of social interactions related to family matters, and take into account more data and theoretical insights. This is because communication difficulties regarding emotions reduce the satisfaction of personal needs and the appropriate response to others' needs and desires in family life. Especially since borderline patients' methods of conveying thoughts, feelings, and desires to others tend to be dramatic, insistent, and intense, often exaggerated. This is because borderline patients strongly insist that their intense inner pain is not adequately acknowledged, and they suffer from pains that no one can bear (Eades, 2016).

On the other hand, the research model results showed that the sense of being a burden or perceived burdensomeness has a direct effect on suicidal tendency in individuals with borderline personality disorder. This finding is consistent with other studies that have shown perceived burdensomeness to be influential in suicidal tendency, with previous research indicating a relationship between higher levels of perceived burdensomeness and suicide (Van Orden et al., 2012). Particularly in borderline personality disorder, higher levels of perceived burdensomeness are associated with suicidal thoughts (Chu et al., 2017). DeCatanaro (2009) found that perceived burdensomeness towards the family is related to suicidal tendency among various populations and high-risk groups (O'Connor, 2011). In a study, Van Orden et al. (2005) showed that perceived burdensomeness is a powerful predictor of suicide attempts and suicidal tendency (Van Orden et al., 2012).

In Iran, previous research has also shown a relationship between higher levels of perceived burdensomeness and suicide. For example, Kiani Chelmardi and others (2018), in a study titled The Mediating Role of Interpersonal Suicide Model (Perceived Burdensomeness, Thwarted Belongingness) in the Relationship Between Importance and Suicide, concluded that Joiner's interpersonal psychology theory of suicide has a good and appropriate fit for predicting suicide (Kiani Chelmardi et al., 2019).

Perceived burdensomeness may have formed during childhood or the attachment phase and may chronically exist in individuals with borderline personality disorder, who experience significant relational difficulties. However, when faced with problems, perceived burdensomeness and attributing these problems to oneself may lead to the desire to eliminate oneself and the formation of suicidal tendency (O'Connor, 2011). This is because perceived burdensomeness implies that an individual's existence is a burden on their family, friends, and society, leading to the belief that "my death is better than my life" for the family, friends, and society (Kiani Chelmardi et al., 2019).

Moreover, perceived burdensomeness is a primary or central predictor that, through the exacerbation of the illness, makes an individual's intention to commit suicide manifest as suicidal behavior. Because the feeling of being a burden, which forms during childhood, especially in individuals with borderline personality disorder, represents pervasive psychological harm, such as negative self-concept, instability in interpersonal relationships, and emotional instability, and is characterized by symptoms such as efforts to avoid real or imagined abandonment, instability in interpersonal relationships, identity disturbance, impulsivity, recurrent suicidal behavior or self-mutilation, emotional instability, chronic feelings of emptiness, and intense anger (Hausmann-Stabile et al., 2021; Kiani Chelmardi et al., 2019), leading to suicidal tendency in affected individuals. Among these, the sense of burdensomeness, which forms due to negative experiences and repeated failures in interactions with others, can exacerbate negative self-concept and abandonment and lead to the desire for death or suicidal tendency in individuals with borderline personality disorder. This is because negative self-evaluation is associated with suicide (Hausmann-Stabile et al., 2021).

Finally, the results of the present research model showed that acquired capability for suicide has a direct effect on suicidal tendency in individuals with borderline personality disorder. This finding is consistent with those of other

researchers. For example, Briones-Buixassa et al. (2021) in predicting non-suicidal self-injurious behaviors in adults with and without borderline personality disorder concluded that momentary hopelessness directly predicts non-suicidal self-injury, but momentary guilt and anger predict non-suicidal self-injury only when interacting with more stable traits of borderline pathology and negative emotional symptoms. Self-destructive and self-injurious behaviors are examples of acquired capability in suicide, which are prevalent in borderline personality disorder. In fact, half of self-injurious behaviors belong to individuals with borderline personality disorder (Briones-Buixassa et al., 2021).

To explain the effect of acquired capability for suicide on suicidal tendency, it can be stated that the main premise of the interpersonal theory is that thwarted belongingness and perceived burdensomeness alone are not sufficient for death, and suicide occurs only in the presence of a combination of suicidal desire along with vulnerability due to fearlessness of death and physical pain tolerance (acquired capability) (Van Orden et al., 2012). Interestingly, individuals with suicidal tendency and higher acquired capability for suicide report more frequent suicide attempts (Smith et al., 2016). Therefore, acquired capability for suicide includes both innate and acquired readiness and probably involves the interaction between these two elements, with previous suicide attempts being one of the strongest predictors of future suicide (Joiner et al., 2009). According to this model, it is assumed that repeated suicide attempts and frequent non-suicidal self-injurious behaviors are among the most important factors that increase an individual's acquired capability for suicide (Chu et al., 2017). This is because the acquired capability for suicide, characterized by increased fearlessness of death and a high tolerance for physical pain in the context of suicide, is considered a determining factor for suicide attempts (Kiani Chelmardi et al., 2019).

In another explanation, it can be stated that cognitive and emotional capacities are impaired in individuals with borderline personality disorder (Kaur & Kang, 2019). This is because individuals with borderline personality disorder symptoms have difficulty understanding, managing, and expressing their emotions, and their emotions are unstable. They use self-injurious and suicidal behaviors to regulate their emotions (Donyavi et al., 2015; Joiner Jr & Silva, 2012; Rogers & Joiner Jr, 2016).

Additionally, in explaining the direct effect of acquired capability for suicide on suicidal tendency, it can be argued that, according to Beck (1998), failure and helplessness are

the primary triggers of suicidal tendency, and acquired capability for suicide explains the tendency to act on suicidal thoughts. This is because individuals who attempt suicide, compared to those with suicidal tendency, exhibit greater acquired capability for suicide (Smith et al., 2016). Therefore, discovering the strong relationship between non-suicidal self-injury and suicide risk enables efforts for suicide prevention in individuals with borderline personality disorder.

5. Limitations & Suggestions

One limitation of this study is the reliance on self-report measures, which may be subject to biases such as social desirability and recall inaccuracies, potentially affecting the validity of the findings. Additionally, the cross-sectional design limits the ability to draw causal inferences, as the relationships observed between variables cannot definitively establish temporal precedence. The study's sample was also limited to individuals with borderline personality disorder within a specific age range and geographic location, which may limit the generalizability of the results to other populations or broader contexts.

Future research should consider longitudinal designs to better capture the temporal dynamics and potential causal pathways between thwarted belongingness, perceived burdensomeness, acquired capability for suicide, and suicidal tendency. Expanding the sample to include diverse populations across different age groups, cultural backgrounds, and psychiatric diagnoses would enhance the generalizability of the findings. Additionally, incorporating objective measures, such as physiological assessments or behavioral observations, alongside self-report instruments, could help mitigate the biases associated with self-report data and provide a more comprehensive understanding of the factors contributing to suicidal tendency in individuals with borderline personality disorder.

The findings of this study underscore the importance of targeting interpersonal factors, such as thwarted belongingness and perceived burdensomeness, in therapeutic interventions for individuals with borderline personality disorder to reduce suicidal tendency. Clinicians should focus on enhancing social connectedness, addressing feelings of burdensomeness, and developing strategies to reduce the acquired capability for suicide through cognitive-behavioral techniques, emotion regulation strategies, and strengthening supportive relationships. Implementing these approaches in clinical practice could improve treatment

outcomes and potentially reduce the risk of suicide in this high-risk population.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contributed in this article.

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