

The Role of Early Maladaptive Schemas and Interpersonal Needs in the Prediction of Suicidal Ideation: A Structural Equation Modeling Study among High School Students

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Abstract

Aim: The primary purpose of the current study is to propose a model for predicting suicidal ideation based on early maladaptive schemas, with the mediation of interpersonal needs among high school students. **Method:** Employing a Structural Equation Modeling (SEM) approach, the research investigated the interplay between early maladaptive schemas and interpersonal needs. The methodology was purposefully, applied research, correlational in its descriptive nature, and rigorously adherent to the SEM design. The study encompassed the entire second-grade high school student population in Qazvin City during the academic year 2022-2023. A stratified multistage cluster sampling method systematically extracted a random sample of 600 students. Data collection utilized three standardized instruments: Beck's Suicidal Ideation Scale (BSSI), the Young Schema Questionnaire-Short Form (YSQ-SF), and the Interpersonal Needs Questionnaire (INQ). Robust data analysis employed SPSS 25 and Smart PLS software. **Findings:** The results indicated that early maladaptive schemas exerted an indirect influence on suicidal ideation, mediated through interpersonal needs. Conversely, no direct effect of early maladaptive schemas on suicidal ideation was observed. Early maladaptive schemas, however, exhibited a direct association with interpersonal needs, (thwarted belongingness and perceived burdensomeness), both of which demonstrated a direct correlation with suicidal ideation. The model's adequacy was confirmed through goodness-of-fit indices (GOF=0.73, SRMR=0.07, NFI=0.86). **Conclusion:** The theoretical implications of this study significantly contributed to the understanding of the intricate relationships influencing suicidal ideation among high school students. Furthermore, the practical applications of these findings extended to educational organizations and counseling centers, offering valuable insights for the development of targeted interventions aimed at reducing suicide rates in this demographic.

Keywords: suicidal ideation, early maladaptive schemas interpersonal needs, students.

Introduction

Suicide is an important public health problem worldwide with countless negative consequences for both individuals and society. There are concerns about the death of approximately 800,000 people per year. In the United States, suicide accounts for more than 48,000 deaths annually (World Health Organization, 2019) and has increased in the past few years (Centers for Disease Control and Prevention, 2020). Adolescents and young people between 15 - 29 years of age are the most vulnerable in this regard, and suicide is one of the three main causes of death among young people aged 10–24 years. (Ma et al., 2016) This phenomenon is also on the rise in Iran, particularly among teenagers and young people (Beyrami 2012). The World Health Organization defines suicide as follows: "Suicide is the deliberate act of killing oneself (WHO, 2013).

Suicidal ideation represents a clinical emergency in psychiatry, and people with suicidal ideation have a higher risk of committing suicide than those without suicidal ideation. Suicidal ideation is a strong predictor of future suicide attempts. (Leghaee, 2019; Berman, 2017; Vélez-Grau et al., 2022, Burke et al., 2016; Rappaport et al., 2017).

However, it is crucial to acknowledge that not all suicidal thoughts ultimately act upon their ideation or meet a fatal outcome (Klonsky & May 2014). Consequently, there arises a pivotal need to discern which individuals contemplating suicide are at the highest risk of translating their ideation into action. Despite this imperative, only a limited number of major suicide theories have systematically addressed this issue. Moreover, several recognized suicide risk factors, such as psychiatric disorders, depression, and impulsivity, demonstrate limited discriminative capacity between those who attempt suicide and those restricted to suicidal ideation. This underscores a critical gap in understanding the distinctions and commonalities between suicide attempters and ideators. Established risk factors for suicide encompass biological components (Rihmer, 2013; Petersen et al., 2014; Pandey et al., 2014), demographics (Olfson et al., 2017; Givon et al., 2018), psychopathology, substance abuse (Goodman et al., 2017; Baldessarini et al., 2016; Hallgren et al., 2017; Icick et al., 2017)

Suicide risk factors exhibit individual variability, with the risk of suicide emerging from intricate interactions among various elements (Berman, 2017). Background factors, life events such as relationship crises, deprivation and vulnerability collectively establish the groundwork preceding the onset of suicidal ideation, (O'Connor, 2011). Further contributing to this context are schemas, assumptions, or underlying rules that govern an individual's thoughts and behaviors. Primary maladaptive schemas, identified as persistent personality issues, constitute enduring factors in this regard (Young et al., 2003).

Interpersonal Psychological Theory (IPT) (Van Orden et al., 2010; Joiner, 2005) has been developed to provide a theoretical model of suicidal behavior. According to this theory, interpersonal relationships are among the main reasons for suicide. Many

theories about suicide have been proposed, but the Interpersonal Theory of Suicide (IPST) has been able to create a promising perspective for understanding suicidal behavior and claims that the tendency to commit suicide is the result of two risk factors: Thwarted Belongingness (TB) and Perceived Burdensomeness (PB) (Ribeiro & Joiner, 2009).

Although much evidence supports the interpersonal theory of suicidality (Chu et al., 2017; Van Orden, 2010), the mechanisms between the factors in IPTS theory and suicide risk are understudied and represent an important area of research. Researchers argue that testing the theoretical models that cause the desire and ability to commit suicide is an essential task in suicide prevention (Joiner 2007; O'Connor and Nock, 2014), especially since recently there have been concerns around the world that the coronavirus pandemic may increase the risk of suicide (Gunnell, 2020; Czeisler, 2020). A study analyzing suicidal tendencies due to the COVID-19 pandemic has highlighted the need to consider its impact on suicidal ideation among young people. (John et al., 2020). Therefore, in the form of a conceptual model, this study attempted to predict suicidal ideation based on primary maladaptive schemas through the mediation of interpersonal needs (Thwarted Belongingness and perceived burdensomeness) in secondary school students.

Methods

The primary objective of the current study was to propose a model predicting suicidal ideation, grounded in early maladaptive schemas with the mediation of interpersonal needs among high school students. The research methodology adopted applied research, conjoined with a descriptive correlational strategy for systematic data acquisition. Employing structural equation modeling as the designated research framework, the study comprehensively encompassed the entire cohort of second-grade high school students in Qazvin City during the academic year 2022-2023. A judicious application of the stratified multistage cluster sampling technique ensured the randomized selection of a sample, precisely constituting 600 students. The data procurement process involved the judicious utilization of three meticulously chosen instruments, culminating in the acceptance and subsequent analysis of 443 diligently completed questionnaires. To select this amount of the sample, it can be said that according to many researchers, a sample size of 300 people is considered good for structural equations, and 500 people are considered very good (Meyers, Gamst, & Guarino, 2016; Kline, 2023).

Beck Scale for Suicide Ideation (BSS): The BSS (Beck & Steer, 1991) serves as an assessment tool for suicide ideation, encompassing plans and intent, about the preceding week. Its robust psychometric properties, including strong internal consistency, test-retest reliability, and convergent validity among psychiatric inpatients, have been

previously demonstrated (Pinninti et al., 2002). In the current investigation, the assessment of the desire for death and the desire for suicide relied on single items extracted from the BSS (Beck & Steer, 1991). Respondents utilized an ordinal response metric for these items, and as such, they were analyzed as categorical criterion variables. This approach is deemed essential for determining clinical cutoff scores. Notably, the BSS total score lacks established clinical cutoff scores (Beck & Steer, 1991) and, due to its continuous nature, could not be utilized for clinical utility analyses. Furthermore, the examination of these BSS items as categorical criterion variables aligns with the methodology employed by Mitchell et al. (2017). Previous research has affirmed that a single-item assessing suicide ideation significantly correlates with the total score from a multi-item assessment (Desseilles et al., 2012), a finding consistent with the present data. In this study, point-biserial correlations revealed significant associations between the dichotomized BSS item 2 ($r_{pb} = .66, p < .001$) and BSS item 4 ($r_{pb} = .71, p < .001$) with the BSS total score. In the Iranian context, the Beck questionnaire was validated on soldiers, resulting in an overall validity of 0.76 and a validity of 0.95 using Cronbach's alpha (Anisi et al., 2005).

The Short Form Schema Questionnaire (SQ-SF): Young's questionnaire comprises 75 items developed in 1998 to assess 18 early maladaptive schemas. These schemas encompass emotional deprivation, abandonment/instability, mistrust/abuse, social isolation/alienation, defectiveness/shame, failure, dependency/incompetence, vulnerability to harm or illness, enmeshment/undeveloped self, subjugation, self-sacrifice, emotional inhibition, unrelenting standards/hyper-criticalness, entitlement/grandiosity, insufficient self-control, admiration/recognition-seeking, pessimism/worry, and self-punitiveness. Respondents rate each item on a 6-point Likert scale (1 for completely incorrect and 6 for completely correct). The instrument's reliability and validity have been assessed in multiple studies (Baranoff et al., 2006). In the research conducted by Branford and colleagues, the validity and reliability of this scale were examined. Exploratory factor analysis (EFA) on the South Korean sample identified a 13-factor solution as the optimal fit, a result confirmed by confirmatory factor analysis (CFA) on data from sample B. CFA on the Australian sample also validated a 13-factor solution. The overall scale demonstrated high internal consistency in both South Korean and Australian groups, with all subscales exhibiting adequate internal consistencies. The Cronbach's alpha results for the internal reliability of the early maladaptive schemas questionnaire ranged from 0.76 to 0.90 for specific coefficients and reached 0.96 for the entire scale. Item correlations exceeding 0.4 confirmed satisfactory internal consistency for most subscales (except for SI, DS, DI, and SS). In Iran, Ahi (2005) standardized this questionnaire, reporting internal consistencies of 0.97 in the female population and 0.98 in the male population using Cronbach's alpha.

Interpersonal Needs Questionnaire (INQ): The INQ (Van Orden et al., 2012) comprises 15 items designed to assess Thwarted Belongingness (TB) with 9 items (scores range from 9 to 63) and Perceived Burdensomeness (PB) with 6 items (scores range from 6 to 42). Respondents use a 7-point response metric (ranging from 1 - "Not at all true for me" to 7 - "Very true for me") to provide self-report responses for each item. Appropriate items are reverse-coded, and scores are summed to derive TB and PB subscale scores, where higher scores indicate greater TB and PB. The INQ exhibits robust psychometric properties, including construct validity, particularly among psychiatric outpatients (Hill et al., 2015; Van Orden et al., 2012). In the current study, strong Cronbach's alpha coefficients were observed for TB (.91) and PB (.94). Confirmatory factor analysis, conducted with 12 questions and a two-factor model, demonstrated a favorable fit between the data and the model. Subsequently, this questionnaire, with 15 questions and two factors assessing thwarted belongingness and perceived burdensomeness, was validated for evaluating interpersonal needs within the Iranian student community. In Iran, in the study of Kiani et al. (2018), this questionnaire was standardized on 500 students. The results showed that the Interpersonal Needs Questionnaire is a good fit for the Iranian population. In addition, components of interpersonal needs have a significant correlation with adverse childhood experiences, depression, anxiety and defeat, and entrapment and indicate the concurrent validity of this scale.

In Table 1, the results of Cronbach's alpha, Composite Reliability (CR), and Average Variance Extracted (AVE) are presented for all variables and research questionnaires.

Research variables	Cronbach's alpha	CR ¹	(AVE) ²
Disconnection and rejection domain	0.93	0.94	0.42
Impaired autonomy and performance domain	0.92	0.93	0.41
Impaired limits domain,	0.84	0.87	0.42
Other-directedness domain	0.84	0.88	0.43
Over vigilance and inhibition domain	0.84	0.87	0.41
primary maladaptive schemas total score	1	1	1
Suicidal ideation	0.96	0.97	0.65
Personal needs	TB	0.93	0.92
	PB	0.84	0.88

¹ (CR)

² AVE

Interpersonal needs total score	1	1	1
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Note: **CR**= Composite Reliability, **AVE**= Average Variance Extracted

The results presented in Table 4 reveal that Cronbach's alpha and the combined reliability for the research constructs are 0.70, suggesting acceptable internal consistency. Furthermore, the average variance extracted exceeds 0.40, affirming the internal validity of the questionnaires and underscoring the reliability and convergent validity of the research model.

Results

In Table 2, demographic characteristics of participants are provided, categorized by gender and overall.

Table 2. Survey of the demographic characteristics of the research participants

gender	number	education place		Grade		
		High school	conservatory	10th	11th	12th
Girl	318	220	98	110	102	106
Boy	125	59	66	34	44	47
Total	443	279	164	144	146	153

According to the findings presented in Table 2, out of the 443 participating students in the current study, 125 were boys, constituting 29%, while 318 were girls, representing 71% of the sample. Among the participants, 279 students attended high school, and 164 were enrolled in the conservatory. Additionally, the distribution across grade levels revealed that 144 individuals were in the tenth grade, 146 in the eleventh grade, and 153 in the twelfth grade.

In Table 3, the minimum, maximum, mean, and standard deviation of the research variables are presented.

Table 3. The minimum, maximum, average, and standard deviation of research variables and their components

Variables		Minimum	maximum	average	standard deviation
Interpersonal needs	Perceived Burdensomeness	7	30	18.01	5.28

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Thwarted Belongingness	3	32	18.47	5.47
Interpersonal needs total score	9	35	23.53	5.64
Suicidal ideation	0	38	3.39	1.03
primary maladaptive schemas total score	75	445	174.14	16.12

As indicated by the results in Table 2, the means of the variables under study in this research are at an average level.

To assess the goodness of fit of the model, R² (coefficient of determination), Q², SRMR, NFI, and GOF indices were utilized. The R² values for self-harm ideation and initial maladaptive schemas were obtained as 0.17 and 0.34, respectively. These values indicate a satisfactory explanation of the endogenous variables through the exogenous variables. In other words, the structural model demonstrates a desirable fit.

The Q² values ($Q^2 = 1 - SSE/SSO$) for the variables of self-harm ideation and initial maladaptive schemas in the present study were determined to be 0.51 and 0.79, respectively. These values indicate a satisfactory explanation of the endogenous variables through the exogenous variables. In other words, the structural model demonstrates a desirable fit (as the obtained values are higher than 0.10, and exceeding 0.10 indicates the model's power in prediction, according to Bagozzi, 2007). Regarding the goodness of fit of the model, the values obtained from the SRMR and NFI indices are 0.08 and 0.90, respectively, indicating an appropriate fit for the model. This is because an SRMR equal to or less than 0.08 and an NFI equal to or greater than 0.90 are considered acceptable (Bagozzi, 2007).

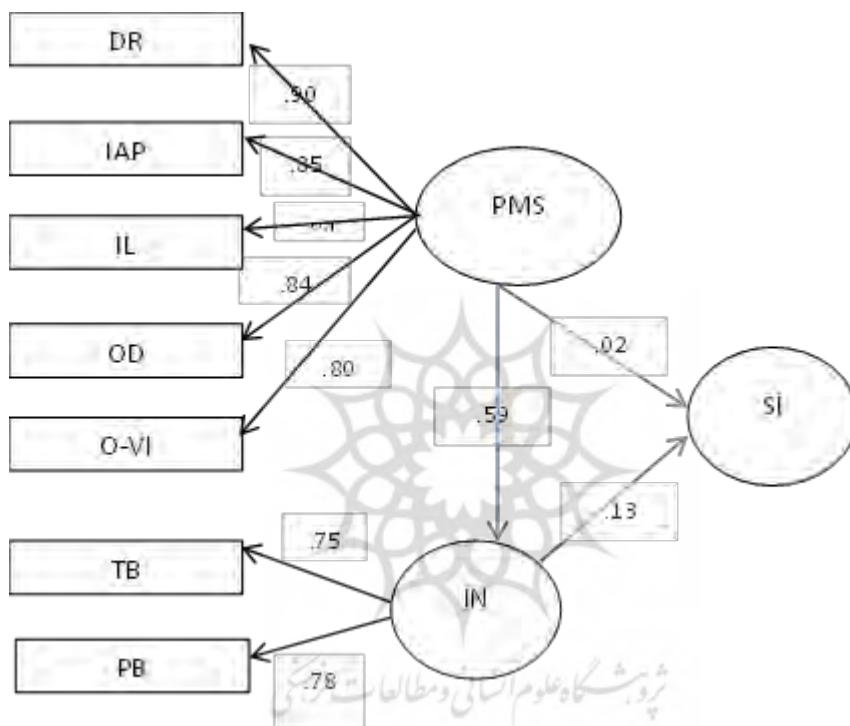
The Goodness of Fit (GOF) index, which indicates the fit between the structural model's quality and the measured model (representing the overall fit of the model), is the primary fit index in the Partial Least Squares (PLS) method, called the Goodness of Fit Index (GFI). This index is considered a comprehensive measure of model fit in PLS and is calculated by assessing the difference between the normalized correlation matrices of observed data and predicted data.

A GOF index value above 0.25 indicates a desirable model fit. In the present study, the value of this fit index is 0.36, exceeding the threshold of 0.25. This indicates an appropriate fit of the model.

As indicated by the calculated values of R² (coefficient of determination), Q², SRMR, NFI, and GOF, the fitted model demonstrates a desirable goodness of fit.

In Figure 1, the mediation role of individual needs in the relationship between initial maladaptive schemas and self-harm ideation is presented in the form of standardized coefficients.

Figure 1. Standard estimation coefficients of the research structural model

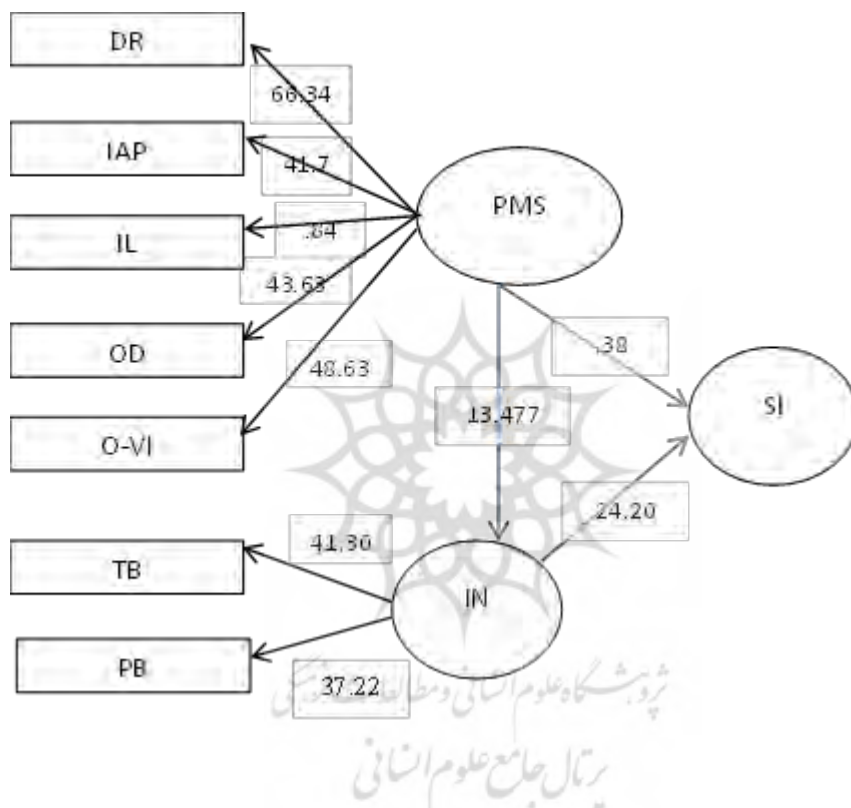


Note: PMS= Primary Maladaptive Schemas, DR=Disconnection & Rejection, IAP= Impaired Autonomy & Performance, IL=Impaired Limits,OD=Other Directedness,O-VI=Over-vigilance & Inhibition, IN= Interpersonal Needs, TB = Interpersonal Needs Questionnaire Thwarted Belongingness Score; PB = Interpersonal Needs, SI= Suicidal Ideation

As the results in Figure 1 indicate, the direct effect of initial maladaptive schemas on individual needs and the direct effect of individual needs on self-harm ideation are both significant. However, the direct effect of initial maladaptive schemas on self-harm ideation is not significant.

In Figure 2, the mediation role of individual needs in the relationship between initial maladaptive schemas and self-harm ideation is presented in terms of path coefficients (T values).

Figure 2. Significant numbers of the structural model of the research



Note: PMS= Primary Maladaptive Schemas, DR=Disconnection & Rejection, IAP= Impaired Autonomy & Performance, IL=Impaired Limits, OD=Other Directedness, O-VI=Over-vigilance & Inhibition, IN= Interpersonal Needs, TB = Interpersonal Needs Questionnaire Thwarted Belongingness Score; PB = Interpersonal Needs, SI= Suicidal Ideation

As the results in Figure 2 indicate, the direct effect of initial maladaptive schemas on individual needs and the direct effect of individual needs on self-harm ideation are both significant. However, the direct effect of initial maladaptive schemas on self-harm ideation is not significant.

The results of the direct and indirect effects of initial maladaptive schemas on individual needs and their impact on self-harm ideation are presented in Table 3.

Table 3. Direct and indirect effect coefficients of research variables

path	β	CI 95%	T	P
Suicidal ideation<- primary maladaptive schemas	0.02	0.13, 0.09	0.36	0.71
Interpersonal needs < primary maladaptive schemas	0.50	0.57, 0.42	14.10	0.0001
Suicidal ideation<- Interpersonal needs	0.17	0.65, 0.48	3.28	0.02
Suicidal ideation<Interpersonal needs <- primary maladaptive schemas	0.06	0.11, 0.02	2.47	0.02

95%CI = 95% confidence interval

As the results in Table 3 indicate, the direct effect of initial maladaptive schemas on individual needs and the direct effect of individual needs on self-harm ideation are both significant. However, the direct effect of initial maladaptive schemas on self-harm ideation is not significant. The indirect effect of initial maladaptive schemas through individual needs on self-harm ideation is significant.

Discussion

The present study was conducted to examine the mediating role of individual needs in the relationship between initial maladaptive schemas and self-harm ideation.

The findings from the structural equation model indicate a direct influence of interpersonal needs on suicidal ideation. The outcomes of the current study align with prior research, reinforcing the consistent nature of the relationship. Various independent studies have emphasized that the two dimensions of interpersonal needs, namely Thwarted Belongingness and perceived burdensomeness, represent significant hazards (Rogers and Joyner, 2019) and serve as robust predictors of suicide (Chu et al., 2017; Hill et al., 2014; Tucker et al., 2017; Patterson, 2015).

Rashid Kiani (2017) and Alizadeh Birjandi (2019) explored the structural model of the interpersonal theory of suicide within the context of college students. Their findings demonstrated, firstly, that the model of the interpersonal theory of suicide exhibits a favorable fit within the Iranian population and has predictive capabilities for suicide. Secondly, they established that interpersonal needs, encompassing perceived burdensomeness and thwarted belongingness, significantly account for variance in the development of suicidal ideation.

In elucidating this finding, it can be asserted that a sense of low belongingness is characterized by an individual's belief in their separation from others, devoid of belonging to a specific family or group. This sentiment stems from a perceived lack of

meaningful membership, encompassing two distinct facets: isolation and a dual deficit in care. The perception of being a burden reflects an individual's perspective grounded in the notion that their existence poses a burden to family members, friends, and society at large. This belief, rooted in a sense of inadequacy, comprises two facets: self-hatred and a sense of responsibility (Ribeiro, J. D., & Joiner, 2009; Van Orden, 2010). Recent research by Marzano (2023) has indicated that the impact of the COVID-19 epidemic on suicidal behavior is frequently linked to feelings of isolation (27.4%). However, the imposition of social distancing measures in response to the COVID-19 pandemic has curtailed students' opportunities for social engagement, potentially giving rise to mental health challenges (Ha & Park, 2021). A study of 500 adults in the United States during the coronavirus pandemic found that the experience of thwarted belongingness during quarantine at home acted as a significant factor influencing suicidal ideation (Gratz et al., 2020).

Rooted in the notion that the need to belong is a fundamental human requirement, the absence of a sense of belonging may lead individuals to perceive life as unworthy or believe that there is insufficient support to overcome life's challenges. Consequently, the lack of belongingness, known as Thwarted Belongingness, contributes to an elevated risk of suicide (Chu et al., 2017).

This implies that the experience of perceived burdensomeness and thwarted belongingness in interpersonal relationships may translate into the development of a negative self-attitude (Hjelmeland & Knizek, 2019). Ribeiro and Joiner (2019) observed that perceived burdensomeness is "emotionally fraught with self-loathing," suggesting that the relationship between thwarted belongingness and perceived burdensomeness may be linked to suicidal risk through the mediating mechanism of internalized hostility. Consequently, strategies aimed at reinforcing individuals' social connectedness and promoting behavioral activation, such as intentional engagement with others, prove effective in mitigating the risk of suicide (Hollingsworth et al., 2017).

Furthermore, the severity of perceived burdensomeness mediates the relationship between depression and suicidal ideation. Approximately 68% of the impact of depressive symptoms on suicidal ideation is attributed to the severity of perceived burdensomeness (Jahn et al., 2011; Short et al., 2019). Ribeiro and Joiner (2019) demonstrated that suicidal behaviors contribute to an escalating sense of perceived burdensomeness and thwarted belongingness over time, indicating a bidirectional relationship. For instance, if an individual perceives their presence as problematic or burdensome to others, they may withdraw from social relationships to alleviate the perceived burden, thereby fostering feelings of diminished belongingness (Hapenny & Fergus, 2017). This reciprocal connection between thwarted belongingness and perceived burdensomeness likely stems from the associations of both constructs with beliefs about responsibility, where suicide is perceived as a means to alleviate personal responsibility or burdens (Teismann et al., 2019).

Furthermore, the outcomes of the current study revealed that primary maladaptive schemas did not exhibit a direct and significant relationship with suicidal thoughts

($P < 0.05$). Instead, primary maladaptive schemas exerted an indirect effect on suicidal thoughts through the mediation of interpersonal needs. This outcome aligns with the findings of Patterson (2015), demonstrating a parallel observation. Contrary to initial predictions, adverse childhood experiences (early maladaptive schemas) did not directly and significantly predict suicide; however, they contributed additional predictive power to forecasting Thwarted Belongingness and Perceived Burdensomeness.

Valderrama et al. (2020) demonstrated indirect relationships between early life trauma and suicidal ideation, mediated by processes such as thinking, reflection, rumination, and impulsivity. As outlined by Casteel et al. (2007), adverse childhood experiences play a significant role in the self-harm model, exerting an indirect influence through the development of early maladaptive schemas and a direct impact by enhancing the acquired ability to commit suicide.

This outcome aligns with the conclusions drawn by Young (1999). Maladaptive schemas, stemming from unmet needs within past interpersonal relationships, manifest as thought patterns influencing various mental health problems, including depression, anxiety, and even suicidal thoughts. Through path analysis, researchers have discerned that the relationship between depression and suicidal thoughts is mediated by social support. In other words, deficiencies in connection (thwarted affiliation) and insufficient social support contribute to suicidal thoughts by inducing depression and anxiety (Rezaei et al., 2016; Khosravani et al., 2019; Kaya and Aydin, 2021). Studies conducted by Ha and Park (2021) and Gratz et al. (2020) independently reported that 91% of students experienced anxiety, with 86% noting a reduction in social interactions. Multiple investigations (Baldessarini et al., 2016; Hill et al., 2011; Anderberg et al., 2016) have indicated the role of anxiety in elevating the risk of suicide. Incompatible schemas emerge as significant contributors to the inclination toward suicide by precipitating depression, anxiety, and insecure attachment styles (Suleimanian, 2017). Consequently, the interpersonal-psychological theory of suicide (Joiner et al., 2005; Van Orden et al., 2012) stands as a valuable model for elucidating suicide among adolescents during the COVID-19 pandemic.

Concerning the influence of maladaptive schemas on interpersonal needs, Dale et al. (2010) discovered that while maladaptive schemas may not have a direct correlation with self-harm and suicide, they can establish vulnerabilities that contribute to subsequent unmet needs (Thwarted Belongingness and Perceived Burdensomeness). These schemas originate from unmet emotional needs in childhood, shaping an individual's perception of the world. Consequently, maladaptive schemas evolve around relationships and attachment to others, influencing the person's future interpretation of the world. These schemas, in turn, guide what the individual notices and pays attention to, predisposing them to Perceived Burdensomeness and Thwarted Belongingness later in life.

Schemas, including those associated with trauma and childhood adversity, are also interconnected with interpersonal needs (Pilkington et al., 2021).

It is essential to note that the present study exclusively focused on suicidal ideation and did not encompass all types of suicide. The utilization of a cross-sectional design

and the confinement of the research to students in Qazvin City represent the principal limitations of this study.

Conclusion

Given the significance of primary maladaptive schema variables and interpersonal needs in students' suicidal ideation, this study not only contributes valuable insights into the relationships among the variables but also holds practical importance for application. The findings of this research can be applied in schools and counseling centers to develop preventive measures against student suicide.

Ethical Considerations: This research meticulously adhered to ethical principles. Participants were granted the right to withdraw from the study at their discretion. Furthermore, comprehensive explanations about the research's purpose and implementation procedures were provided to all participants, with a strong emphasis on the assurance of anonymity and complete confidentiality of their information.

Disclosure Statements

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Contribution of the authors: All authors participated in the design, implementation, and writing of this study.

Conflict of interest: According to the author, this article has no conflict of interest.

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