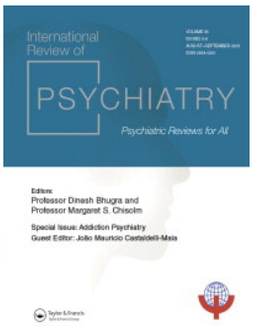

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Defeat, entrapment and suicidal ideation in a Turkish community sample of young adults: an examination of the Integrated Motivational-Volitional (IMV) model of suicidal behaviour

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ABSTRACT

The present study examines the relationships between defeat, entrapment, suicidal ideation, thwarted belongingness, and perceived burdensomeness through the Integrated Motivational-Volitional (IMV) Model of Suicidal Behaviour in a sample of Turkish young adults. The sample consisted of 451 individuals (72.5% females, M_{age}= 25.20). The correlation analyses revealed significant relationships between defeat, entrapment, suicidal ideation, thwarted belongingness, perceived burdensomeness in the expected directions. Mediation and moderation analyses partly confirmed the assumptions of the motivational phase of the IMV model; entrapment played a mediating role between defeat and suicidal ideation, and thwarted belongingness (but not perceived burdensomeness) had a moderating role in the pathway between entrapment and suicidal ideation. These findings add a new dimension to the understanding of suicide risk and potential protective factors through the IMV model, which was tested for the first time in the Turkish population. It is anticipated that this study will contribute to suicide prevention intervention strategies, especially for young adults, at-risk group for suicide in Turkey.

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KEYWORDS
IMV model; suicide; defeat; entrapment; thwarted belongingness; Turkey

Introduction

Suicide poses a global public health challenge, with 703,000 individuals taking their own lives annually (WHO, 2021). Despite the absence of available evidence on suicide reports in low and middle-income countries (Iemmi et al., 2016), the WHO (2021) reports that 77% of global suicides occurred in these regions in 2019. The reported suicide numbers in these countries may be distorted due to the stigma, shaming, and criminalisation associated with suicidal behaviours, as emphasised in various studies (Mishara & Weisstub, 2016; Vijayakumar et al., 2020). This necessitates additional research in these regions. Cultural values significantly shape attitudes toward suicide; in specific cultures and religions, individuals who disapprove of suicidal thoughts and behaviours may perceive suicide as a taboo (Cvinar, 2005; Eskin, 1999, 2004; Witte et al., 2010). This connection to stigma and shame can impede open discussions and disclosure about suicide, impacting help-seeking behaviours and, consequently, escalating the risk of suicide (Öztürk & Akin, 2018).

As a developing country, Turkey has witnessed an upward trend in suicide rates in recent years; rising from 2584 in 2001 to 4146 in 2022 with a rate of 4.88 per 100,000 people (Turkish Statistical Institute, Turkish Statistical Institute [TSI], 2023) (see Figure 1). In 2022, male suicides surpassed female suicides, constituting 75.03% of the total cases, reflecting a ratio of 3:1; which is comparable to those observed in Western and European countries (Bennett et al., 2023; Värnik, 2012). Aktaş and Kantar (2016) analysed Turkey's suicide data from 2002 to 2011, investigating the correlation between the level of socioeconomic development and unemployment and the mean number of male and female suicides. Their findings revealed a significant association between male suicides and factors such as socioeconomic development level and

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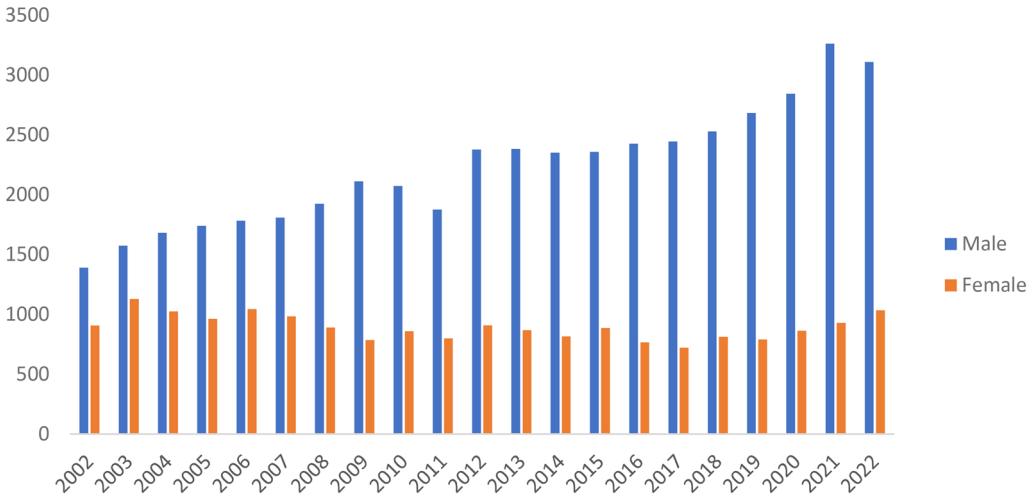

Figure 1. Number of suicides in Turkey between 2002 and 2022 based on gender.

unemployment, highlighting unemployment as an important risk factor for deaths by suicide in males.

In 2022, illness emerged as the most significant risk factor for suicide (26.8%) compared to other factors, such as relationship problems, economic issues, and business failure. Additionally, hanging (46.8%) stood out as the primary suicide method across all age groups and genders (TSI, 2023). In 2022, many suicides were observed within the 20–34 age group, accounting for 37.91% of cases (TSI, 2023). The high suicide numbers in this age group may be attributed to both psychological and contextual factors (e.g. financial difficulties) (Eskin et al., 2007). Numerous studies have found that a significant portion of individuals who attempt suicide are diagnosed with at least one psychiatric disorder (e.g. Nock et al., 2008). Specifically, Oyekcin et al. (2017) examined psychological symptoms, hopelessness, and suicidal behaviour in a group of 4330 university students living in Turkey. Over 25% of the students in the study exhibited signs of depression, and approximately one-third displayed symptoms of anxiety. More than 10% of the participants reported experiencing suicidal thoughts. The study revealed that symptoms of depression and anxiety, along with perceived mental health and feelings of hopelessness, strongly correlated with the reports of suicidal thoughts. The researchers also identified a noteworthy correlation between lower socio-economic status and the presence of depression and anxiety symptoms. Another research conducted by Eskin et al. (2005) revealed that among a group of 1262 Turkish university students, approximately 42% had thoughts of suicide, and 7% had attempted suicide at some point in their lifetime or within the past 12 months. Toprak et al. (2011) examined the lifetime prevalence of self-harm, suicidal ideation, and suicide attempts in a sample of 636 university students in Turkey and found the prevalence for each as 15.4%, 11.4%, and 7.1%, respectively.

These studies, combined with data from TSI (2023) concerning suicidal thoughts, behaviours, and suicides among young individuals, highlight the elevated risk of suicide within this age group. This phase, commonly known as a 'quarter-life crisis,' as coined by Robbins and Wilner (2001), marks the onset of both highs and lows in the lives of emerging adults. Typically occurring between the ages of 20 and 35, this stage is characterized by identity confusion, insecurity regarding short and long-term goals, and a sense of chaos in work-life due to inherent uncertainty (Robinson, 2016). Importantly, the crisis experienced during this stage has the potential to heighten stress and anxiety in young adults, making them more vulnerable to mental health challenges and raising the likelihood of suicidal thoughts and behaviours (Atwood & Scholtz, 2008).

The problem

While the crude suicide rates in Turkey are lower than those observed in many European countries, the increasing trend signifies that suicide at young ages has emerged as a noteworthy public health issue in Turkey (Karkin & Eskin, 2023; Yakar et al., 2017) and should be immediately addressed by intervention programs. To tackle this public health issue, it is crucial to initially understand the risk and protective factors and how they influence suicidal outcomes. However, suicide is a result of complex risks and a lack of protective factors, necessitating a broader perspective.

A comprehensive understanding of suicide risk can be achieved through existing evidence-based frameworks tested and validated through empirical research, enabling the identification of individuals at risk. For example, identifying proximal risk factors for suicidal thoughts can lead to the development of more effective suicide prevention and intervention strategies.

Overview of the IMV model

To inform evidence-based suicide prevention strategies and national policies in Turkey, our research involves utilising the Integrated Motivational-Volitional (IMV) Model of Suicidal Behaviour (O'Connor & Kirtley, 2018) in a community sample of young adults. The IMV model aims to synthesise the existing knowledge of suicide and associated risk and protective factors by emphasising a complex interplay of various factors influencing the psychology of suicidal mindset (O'Connor et al., 2011). It outlines the pathway leading to suicidal thoughts and behaviours in three phases (see Figure 2).

Pre-motivational phase delineates the biopsychosocial context, identifying factors of vulnerability and triggering negative events. The motivational phase[1] focuses on the psychological processes that lead to the formation of suicidal ideation and intent, through defeat (i.e. social rejection and loss) and entrapment (i.e. feelings of being trapped) appraisals. The model suggests that defeat predicts suicidal ideation through entrapment appraisals (mediating role of entrapment) while moderators in this phase could influence the pathways from defeat to entrapment and from entrapment to suicidal ideation. For example, thwarted belongingness (i.e. sense of failed belongingness) and perceived burdensomeness (i.e. feelings of being a burden to others) are proposed to affect suicidal thoughts particularly when feelings of entrapment are high. The volitional phase explains the factors that govern the transition from suicidal ideation to enaction (i.e. suicide attempts). These factors include easy access to means of suicide (e.g. firearm), impulsivity, and past suicide attempts.

A growing number of studies, both cross-sectional (Branley-Bell et al., 2019; Dhingra et al., 2016; Wetherall et al., 2018; Forkmann & Teismann, 2017; Lucht et al., 2020) and longitudinal (Owen et al., 2018; O'Connor et al., 2013), tested the assumptions of the model and supported its utilisation in various populations (e.g. individuals from community samples, university students, people with bipolar disorders, psychiatric inpatients).

These studies suggest that the model has the potential to identify individuals at risk of suicide, thereby contributing valuable insights to suicide prevention and intervention initiatives. For instance, psychotherapies could incorporate certain concepts from the model, such as "entrapment," into their content. Sandford et al. (2022) demonstrated the application of the IMV model as a framework for cognitive-behavioural therapy (CBT) practitioners. They contend that feelings of entrapment often involve distortions of reality and can be addressed through various conventional CBT interventions, including the management of ruminative thinking and the use of thought diaries. The authors propose that CBT

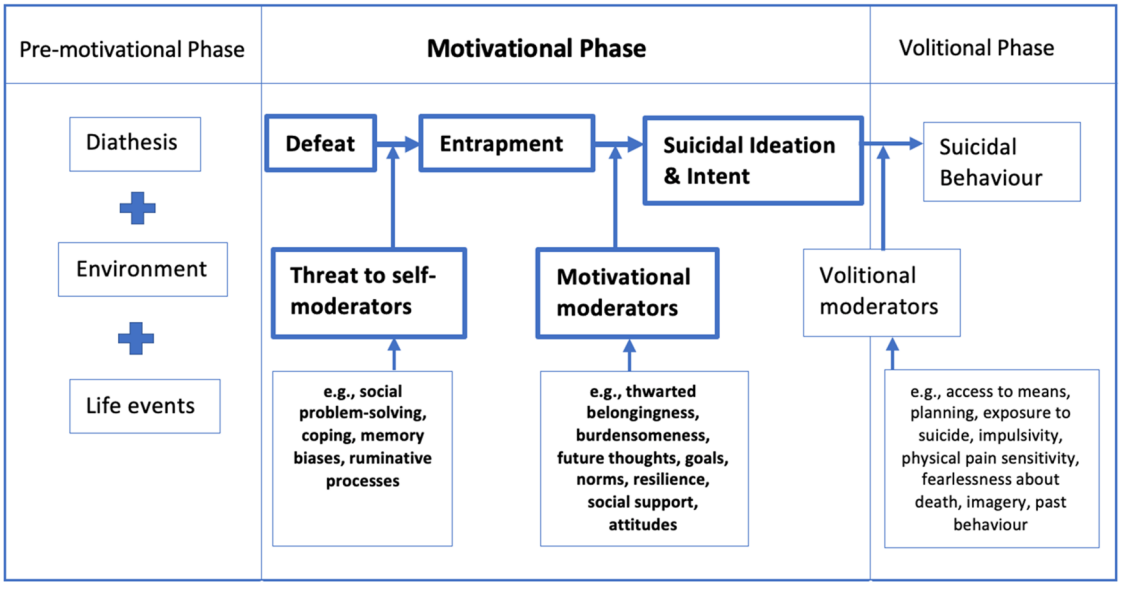

Figure 2. The Integrated Motivational-Volitional Model of Suicidal Behaviour (adapted from O'Connor & Kirtley, 2018).

therapists have the capability to address crucial factors that may heighten the risk of an individual progressing to suicidal behaviour, and the IMV model provides a framework for understanding and potentially refining formulation and interventions.

While this model has received substantial support in Western populations, suicide is also a sociocultural phenomenon, and risk and protective factors may vary cross-culturally (Snowdon, 2018; Turecki et al., 2019). Consequently, interventions relying on factors significant in Western societies may not be applicable or effective when applied to intervention and prevention strategies in other parts of the world. Examining the applicability of the IMV model in diverse cultural contexts is crucial for understanding its generalizability and effectiveness across different societies (e.g. Atilola & Ayinde, 2015; Chelmardi et al., 2023). For example, while the IMV model and previous studies underscore the importance of cognitive appraisals, views on life and death, and alternative escape routes as crucial psychological factors in suicidal behaviours, it is essential to recognise that these concepts are subject to cultural variations and beliefs.

The present study

To fully understand the IMV model and assess its applicability in explaining the emergence of suicidal thoughts in Turkey, we will, for the first time, examine the key elements of this model within the context of Turkish young adults. Given that Turkey is a developing country with a predominantly Muslim population, it becomes crucial to investigate whether the factors and relationships proposed by the IMV model hold true and have similar implications for suicidal behaviour. This examination will carry theoretical and clinical implications for Turkey's suicide prevention strategies and policy agenda. Furthermore, from a global perspective, systematically testing and adapting the IMV model in diverse cultural settings could enhance its utility and relevance in addressing suicidal behaviour on a global scale.

As an initial step in testing the IMV model, the current study only focused on the motivational phase of the model. Therefore, the relationships between defeat, entrapment, thwarted belongingness, perceived burdensomeness, and suicidal ideation were examined in this study.

The following below registered hypotheses[2] were tested in this study:

H1: Defeat will predict suicidal ideation.

H2: Entrapment will mediate the defeat-suicidal ideation relationship.

H3: Thwarted belongingness will moderate the entrapment-suicidal ideation relationship.

H4: Perceived burdensomeness will moderate the entrapment-suicidal ideation relationship.

Besides, Karkin and Eskin (2023) investigated risk factors and correlates of suicidal ideation and attempts in Turkey and concluded that culture plays a fundamental role in suicide, thus, should be considered in future models of suicide. Based on this, it is crucial for researchers to integrate a range of culturally specific variables into their studies to comprehensively address suicide. Hence, this study examined the correlational relationships between the IMV model's motivational phase variables and individuals' level of religiosity[3].

Materials and methods

Participants

This study involved 451 individuals, of whom 327 (72.5%) were females and 124 (27.5%) were males. The age of the participants ranged between 18 and 70, with a mean age of 25.20 ($SD \pm 8.26$). 92 (20.4%) participants reported low self-expressed socioeconomic levels (SESL), while 348 (77.2%) reported moderate SESL, and 11 (2.4%) reported high SESL.

Power analysis

A power analysis was performed using the G* Power 3.1.9.7 program to determine the sample size required (Buchner et al., 2020). Accordingly, with a significance level of 0.05, power of 0.80, and a small effect size of 0.02 (Cohen, 2013), the required sample size is determined as 395. After reaching a sufficient sample size, a post-hoc power analysis was conducted. The power of this study was calculated at 0.85 (1-β err probe), indicating a sufficient sample size for the planned analyses.

Measures

Defeat scale (DFS)

The 16-item DFS (Gilbert & Allan, 1998; Turkish version: Akın et al., 2013) was employed to measure the feelings of defeat. Each item (e.g. "*I believe that I am unable to achieve the goals I have set for myself.*" and "*I think there is nothing left for me to fight for in*

life.") is rated from 1 (*Never*) to 5 (*Every time*). The higher the score, the greater the level of feelings of defeat. In this study, Cronbach's α was .94, and McDonald's ω was .94.

Entrapment scale Short-Form (E-SF)

The 4-item E-SF (De Beurs et al., 2020) was employed to measure entrapment. Two items are related to external entrapment (feelings of being trapped because of external factors; e.g. "*I often have the feeling that I would just like to run away.*" and two items are related to internal entrapment (feelings of being trapped because of internal factors and individuals' thoughts; e.g. "*I feel trapped inside myself.*"). The answers are rated from 0 (*Not at all like me*) to 4 (*Extremely like me*) on a five-point Likert scale. The higher the score, the greater the level of entrapment feelings.

The E-SF was adapted to Turkish culture in this study. The scale was translated from English into Turkish by three field experts, and the reverse translation was completed by three field experts. A final implementation form was developed following the evaluation of the scale by four field experts. The scale was adapted to Turkish culture using confirmatory factor analysis (CFA), Cronbach's alpha, and McDonald's ω internal consistency coefficient. The CFA indicated an excellent fit to the data for both one factor and a two-factor (i.e. internal and external entrapment) model (one factor model = $\chi^2 = 6.125$, $df = 2$, $p < .05$; $\chi^2/df = 3.06$; RMSEA = .07; CFI = .99; IFI = .99; GFI = .99; NFI = .97; TLI = .98; RFI = .98; SRMR = .013; two-factor model = $\chi^2 = 4.582$, $df = 1$, $p < .05$; $\chi^2/df = 4.58$; RMSEA = .08; CFI = .99; IFI = .99; GFI = .99; NFI = .99; TLI = .98; RFI = .97; SRMR = .010).

Finally, Cronbach's alpha and McDonald's ω internal consistency coefficients were examined. In this study, Cronbach's α was .88, and McDonald's ω was .89.

Suicide probability scale (SPS)

The 'suicidal ideation' subscale of the 36-item SPS (Cull & Gill, 1988); Turkish version: Batıgün & Şahin, 2018) was utilised to measure suicidal ideation. Each item (e.g. "*I never thought about suicide.*" and "*In my opinion, suicide is not a suitable method of punishment for others.*") is rated from 1 (*Sometimes*) to 4 (*Most of the time or always*) on a four-point Likert scale. The scale is composed of four subscales self-perception, impulsivity, hopelessness, and suicidal ideation. The higher the score, the greater the level of suicidal ideation. In this study, Cronbach's α was .78, and McDonald's ω was .77 for Suicidal ideation.

Depression, anxiety, stress scales (DASS-21)

The 'Depression' subscale of the 21-item DASS-21 (Lovibond & Lovibond, 1995; Turkish version: Sarıçam, 2018) was employed to measure depression. Each item (e.g. "*There was nothing that excited me.*" and "*I felt that I was worthless as an individual.*") is rated from 0 (*Never*) to 3 (*Always*) on a four-point Likert scale. The scale is composed of three subscales: depression, anxiety, and stress. A higher score indicates a greater level of depression. In the present study, Cronbach's alpha coefficient was .89, and McDonald's ω was .89 for the depression subscale.

Interpersonal needs questionnaire (INQ)

The 10-item INQ (Van Orden et al., 2012; Turkish version: Eskin et al., 2020) was employed to measure thwarted belongingness and perceived burdensomeness. Each item (e.g. "*Currently, I feel that the people in my life would be better off without me.*" and "*Nowadays, I feel like a stranger when I am in social situations.*") is rated from 1 (*Strongly disagree*) to 5 (*Strongly agree*) on a five-point Likert scale. The scale is composed of two subscales: thwarted belongingness and perceived burdensomeness. The higher the score, the greater the level of thwarted belongingness or perceived burdensomeness. In this study, Cronbach's α was .73, and McDonald's ω was .72 for thwarted belongingness. Cronbach's α was .89, and McDonald's ω was .89 for perceived burdensomeness.

Individual religiousness scale (IRS)

The 6-item IRS (Zagumny et al., 2012; Turkish version: Ayten, 2013) was employed to measure individual religiousness. Each item (e.g. "*Every aspect of my life is influenced by my religious beliefs.*" and "*It is essential for me personally to devote a certain amount of time to religious thought and prayer because religion affects all aspects of my life.*") is rated from 1 (*It's not suitable for me at all*) to 5 (*Completely suitable for me*) on a five-point Likert scale. The higher the score, the greater the level of individual religiousness. In this study, Cronbach's α was .89, and McDonald's ω was .89.

Procedure and ethics

Data was collected from an online survey using Microsoft Forms, which included all measures of the study stated above, as well as sociodemographic information. As part of the consent procedure, all participants were given an information sheet that outlined the study's objectives. They were also informed that they could withdraw from the study at any time without providing any explanation.

We did not collect any identifiable information to protect the confidentiality. Participants were only allowed to complete the online survey once. Participation in this study is restricted to individuals who are 18 years of age or older who agree to volunteer to take part in the study. The present study was approved by Siirt University's Institutional Review Board (Reference number: 4981). The study was conducted according to the Helsinki Declaration throughout all phases of this research.

Data analysis

Preliminary data analysis

Several assumptions had to be tested before proceeding with the primary analysis, including multicollinearity and univariate-multivariate normality. The skewness and kurtosis statistics were estimated to test the assumption of normality. An elliptical distribution was also observed in the scatter diagram matrix. The variance inflation factor (VIF), tolerance statistics, and condition indexes were calculated to test the multicollinearity assumption. Tolerances lower than 0.2, VIFs higher than 10, and condition index higher than 15 are considered acceptable (Albayrak, 2005; Shrestha, 2020). Using the Mahalanobis distance, which is frequently used to detect outliers, 13 participants were excluded from the analysis (Tabachnick & Fidell, 2007).

Main analyses

The preliminary analyses were followed by an examination of the role entrapment plays in mediating the relationship between defeat and suicidal ideation. To test these hypotheses (i.e. H_1 and H_2), mediation analysis was employed using PROCESS macro, Model 4 (Hayes, 2013). The analysis is a statistical method employed to investigate the mechanisms or routes by which one variable (e.g. defeat) affects another variable (e.g. suicidal ideation) by means of an intermediary variable (e.g. entrapment) (VanderWeele, 2016). To detect a mediation effect, there needs to be a direct relationship between the independent variable (e.g. defeat) and the dependent variable (e.g. suicidal ideation). Subsequently, the relationship should decrease or disappear (i.e. insignificant) when the mediating variable is incorporated into the model (Hayes & Preacher, 2014).

Moreover, to test moderating effects (i.e. to test H_3 and H_4), two separate moderation analyses were employed using PROCESS macro, Model 1. While mediation analysis examines the mechanism via which a causal effect operates, moderation analyses, also popularly known as interaction, is employed to investigate the conditions, situations, or specific individuals for whom the effect is present or absent, and to what extent (Hayes & Rockwood, 2017). To be more precise, the impact of X (e.g. Entrapment) on Y (e.g. suicidal ideation) is said to be moderated by W (e.g. thwarted belongingness or perceived burdensomeness) when the magnitude or direction of X's impact on Y changes in relation to W.

A 95% confidence interval was defined when testing the proposed models (Preacher & Hayes, 2004). A bias-corrected bootstrapping procedure was used to determine whether indirect effect and moderating effects were significant. Bootstrapping is a statistical resampling approach that involves estimating the sampling distribution of a statistic by repeatedly sampling from the observed data with replacement (Hayes, 2015). As a threshold for resampling, a bootstrap value of 10,000 was used. All data were analysed using SPSS 29.0, JASP 0.16.1, and G* Power 3.1.9.7 programs.

Results

Preliminary analysis

The preliminary analysis of the data indicates that the variables of the study have distributional properties that are suitable for further study, with skewness ranging from −.63 to 1.25 and kurtosis ranging from −.50 to .84. All variables presented acceptable levels of normal distribution, with none exceeding 2, suggesting that all variables were approximately

Table 1. Descriptive statistics and correlation results ($N = 451$).

	1	2	3	4	5	6	7
1. Defeat	–						
2. Entrapment	.76**	–					
3. Suicidal Ideation	.42**	.39**	–				
4. Thwarted Belongingness	.61**	.58**	.33**	–			
5. Perceived Burdensomeness	.57**	.53**	.42**	.53**	–		
6. Depression	.78**	.71**	.39**	.66**	.61**	–	
7. Individual Religiousness	−.23**	−.20**	−.13**	−.23**	−.15**	−.21**	–
Mean	36.84	10.46	13.98	17.18	11.03	7.2	22.89
Std. Deviation	14.14	4.76	5.23	7.05	7.33	4.61	5.06
Skewness	0.77	0.45	0.54	0.26	1.25	0.77	−0.63
Kurtosis	−0.14	−0.87	−0.5	−0.41	0.84	0.26	0.25

**$p < .001$.

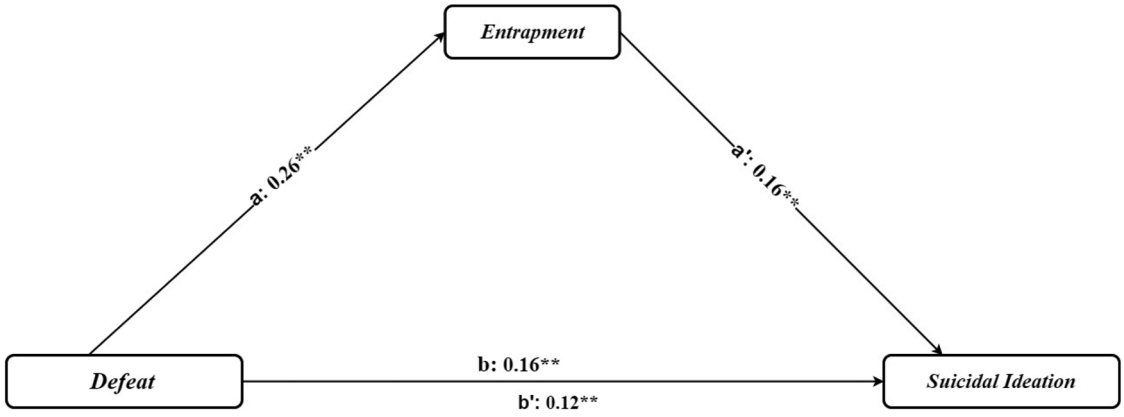

Figure 3. Modelling the mediation analysis.

normally distributed (Kline, 2015). Moreover, intercorrelations between variables were explored. As reported in Table 1, Pearson correlation shows that all variables were correlated in the expected directions. The relationships between defeat, entrapment, suicidal ideation, thwarted belongingness, perceived burdensomeness, and depression were all positive with large effect sizes (Gignac & Szodorai, 2016). Individual religiousness was negatively related to defeat, entrapment, perceived burdensomeness, and depression with medium effect sizes, and it was inversely correlated with suicidal ideation and thwarted belongingness with small effect sizes (Gignac & Szodorai, 2016).

Table 2. Mediation analysis results.

			95% CI	
Path		Coefficient	LL	UL
Defeat → Entrapment → Suicidal Ideation		.04	.00	.08
Total effect		.16	.13	.19
Direct effect		.12	.07	.16
Total indirect effect		.04	.00	.08
	Bootstrapped standardized indirect effect	Boot *SE*	Boot LLCI	Boot ULCI
Bootstrap result for standardized indirect effect Entrapment	.11	.05	.01	.21

Note. CI: confidence interval; boot: bootstrapped; bootstrap sample size: 10,000; LL: lower limit, UL: upper limit; LLCI: lower limit confidence interval; ULCI: upper limit confidence interval.

Mediation analysis

We conducted a mediation analysis to determine whether entrapment mediated the relationship between defeat and suicidal ideation. To determine whether there was a mediation effect, model 4 was used using the PROCESS macro (Hayes, 2013). First, there was a direct effect of defeat on suicidal ideation (total effect, β = .156, p < .001, *95%* CI = [.13, .19]), confirming H_1. Defeat was found to be a positive predictor of entrapment (β = .257, p < .001, *95%* CI = [.24,.28]), and entrapment was a predictor of suicidal ideation (β = .162, p < .001, *95%* CI = [.02, .30]). Therefore, mediation analysis could be conducted on the data based on these results. A mediator (i.e. entrapment) was included in the model. The results indicated that the coefficient was significant (indirect effect, β = .041, *95%* CI = [.00, .08]); entrapment mediated the relationship between defeat and suicidal ideation (Figure 3), confirming H_2 (see Figure 3).

Specifically, after the mediator variable (e.g. entrapment) was included in the model, it was found that the coefficient was still significant but diminished, indicating a partial mediation effect (Hayes & Preacher, 2014). Therefore, H_1 and H_2 were supported by the study findings (see Table 2).

Moderation analyses

To test H_3, we used the PROCESS macro, Model 1, (Hayes, 2013) to examine the moderating effect of thwarted belongingness on the entrapment–suicidal ideation relationship. The proposed model indicated that thwarted belongingness moderated the effect of entrapment on suicidal ideation (see Table 3), supporting H_3.

The interaction (entrapment*thwarted belongingness) was significant (β= .0183, 95% CI= [.00, .03]). As a result, three levels of conditional effects were assessed: one standard deviation below the mean, at the mean, and one above the mean of entrapment scores. There was a significant conditional effect with one standard deviation below the mean (β =.17. 95% CI= [.01, .31]). There were significant conditional effects at the mean (β=.29. 95% CI= [.18, .41]), and

at one standard deviation above the mean (β= .42. 95% CI= [.29, .56]) (see Figure 4).

The PROCESS macro, Model 1, was used to perform second moderation analysis to test the final hypothesis of the study (H_4). We examined whether perceived burdensomeness moderated the effect of entrapment on suicidal ideation. According to the results, perceived burdensomeness had no moderating effect on suicidal ideation in the presence of entrapment, failing to support H_4 (see Table 4).

The interaction (entrapment*perceived burdensomeness) was not significant (β= .0084, 95% CI= [-.00, .02]) (See Figure 4). In the model, however, the path of entrapment and suicidal ideation was significant (β= .2515, 95% CI= [.14, .36]). Furthermore, perceived burdensomeness variable predicted suicidal ideation (β= .1895, 95% CI= [.11, .27]) (See Table 4).

Table 3. Moderating effect of thwarted belongingness.

		Y (Suicidal Ideation)				
Antecedent	Coeff.	*SE*	*t*	*p*	LLCI	ULCI
Constant	13.62	.26	53.29	<.001	13.12	14.13
X (Entrapment)	.29	.06	5.05	<.001	.18	.41
Thwarted belongingness	.11	.04	2.85	<.05	.03	.19
Entrapment*Thwarted Belongingness	.02	.01	2.84	<.05	.01	.03
		R =.43; ΔR^2=.18				
		F=33.12; p<.001				

Note. CI: confidence interval; LLCI: lower limit confidence interval; ULCI: upper limit confidence interval.

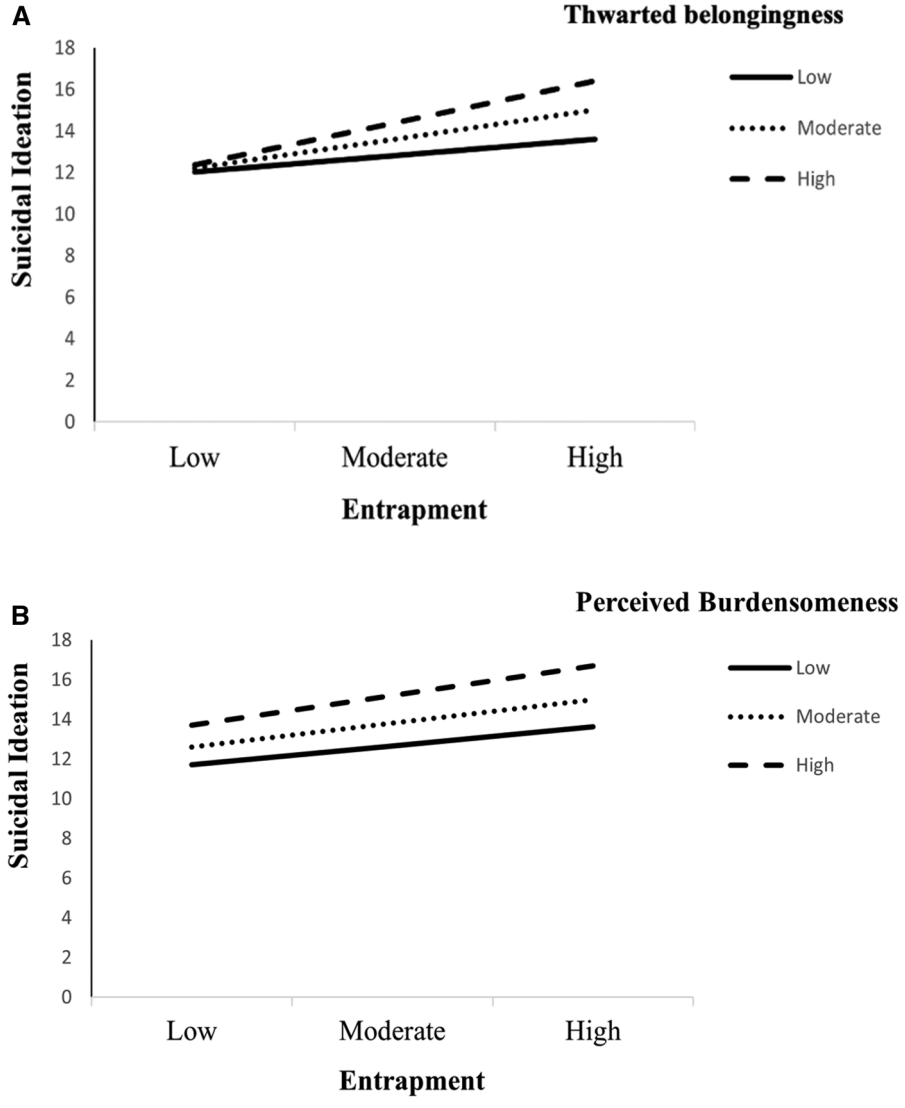

Figure 4. Modelling moderating effects of thwarted belongingness and perceived burdensomeness.

Table 4. Moderating effects of perceived burdensomeness.

		Y (Suicidal Ideation)				
Antecedent	Coeff.	*SE*	*t*	*p*	LLCI	ULCI
Constant	13.82	.25	55.10	<.001	13.33	14.31
X (Entrapment)	.25	.05	4.62	<.001	.14	.36
Perceived burdensomeness	.19	.04	4.53	<.001	.11	.27
Entrapment*Perceived burdensomeness	.01	.01	1.26	>.05	−.00	.02
		R=.47; ΔR^2 = .22 F=41.67; p<.001				

Note. CI: confidence interval; LLCI: lower limit confidence interval; ULCI: upper limit confidence interval.

Discussion

The purpose of this study was to examine the relationships between defeat, entrapment, suicidal ideation, perceived burdensomeness, thwarted belongingness, and religiosity in a group of young adults. Correlation analyses showed significant positive relationships between key variables in the IMV model: defeat, entrapment, depression, suicidal ideation, thwarted belongingness, and perceived burdensomeness, supporting the previous evidence (e.g. Dhingra et al., 2016; Forkmann & Teismann, 2017).

Particularly, the high correlations between defeat and entrapment and suicidal ideation in young Turkish people support previous cross-sectional and longitudinal studies examining these relationships in different samples (Höller et al., 2022; Pollak et al., 2021). Defeat includes both feelings of powerlessness and humiliation (Gilbert & Allan, 1998). Individuals may feel defeated by life due to difficult life events, unable to find the strength to cope, and humiliated due to failure in social struggle (Gilbert, 2006). All these situations may increase entrapment feelings and suicidal ideation. Especially young adults in Turkey within the quarter-life crisis age group (20–35) may experience the feeling of defeat more due to uncertainty about their future, inability to obtain status related to unemployment, and psychological problems arising from other relationships (Smith et al., 2012). Indeed, the latest suicide data in Turkey shows that the most suicidal group consists of individuals between the ages of 20–34 (TSI, 2023), indicating a need for targeting these key variables of the model (defeat and entrapment) in young adults living in Turkey to reduce suicidal outcomes.

Also, our exploratory analysis revealed significant negative relationships between all key variables of the IMV model and religiosity. Studies in the literature examining the relationship between religiosity and depression (Marques et al., 2022), suicidal ideation (Vitorino et al., 2023), thwarted belongingness, and perceived burdensomeness (Schussman, 2017) support these findings. However, to the best of our knowledge, this study is the first to investigate the relationship between religiosity and defeat and entrapment. The negative relationships between religiosity and two key variables in the IMV model, defeat, and entrapment, suggest that religiosity may be one of the suicide protective factors that can be included as a moderator in the motivational stage of the IMV model (O'Connor & Kirtley, 2018). However, this requires further examination.

According to the IMV model, feelings of defeat lead to feelings of entrapment and thus suicidal ideation (O'Connor & Kirtley, 2018). Our results confirmed the mediating role of entrapment in the motivational phase of the model, consistent with the previous findings (Zortea et al., 2020; Wetherall et al., 2019). This implies that young individuals in their twenties and thirties residing in Turkey, struggling with discouraging living conditions, are more prone to experiencing feelings of inadequacy and entrapment. Consequently, they may develop distorted beliefs and consider suicide as a potential means of escaping their challenging circumstances (Sarigül et al., 2023; Yasdiman et al., 2022). Moreover, this mediating role of entrapment means that defeat and entrapment are closely related and measure different constructs (Lucht et al., 2020). Because while the feeling of defeat arises from a situation with a negative outcome, entrapment is the decision that it is not possible to cope with this situation. From this perspective, the current research findings extend the discussions on the similarities and differences between defeat and entrapment (Griffiths et al., 2015; De Beurs et al., 2020).

Thwarted belongingness had a moderating role in the pathway between entrapment and suicidal ideation, indicating that as the level of thwarted belongingness increases, the effect of entrapment on suicidal ideation increases, supporting other studies (Lucht et al., 2020; Ordóñez-Carrasco et al., 2022). Thwarted belongingness means the social alienation of the individual from his/her family, friends, and community (Van Orden et al., 2008). When individuals with high levels of thwarted belongingness feel lonely, they may be more likely to choose suicide as a way out of entrapment feelings (Van Orden et al., 2012). Especially young adults try to fulfil their search for identity by joining certain groups. Membership in these groups can provide them with the gains of being safe, feeling valuable, and belonging and such gains fulfil their need to belong, reducing the

likelihood of suicide in young adults (Eskin, 2022). However, the recent terrorist attacks caused by religious-ideological groups and major economic crises in Turkey have negatively affected individuals' participation in groups and their desire to live in the country (Banazılı, 2023; Erdem, 2023). These negative effects may have decreased sense of belonging levels of young adults who experience many problems such as unemployment which can be targeted to reduce negative mental health outcomes.

Perceived burdensomeness is the intense experience of the individual's thoughts that they are a burden on their family and friends, that is, that they would be better off without them. Our analysis did not find burdensomeness to be a moderator in the pathway from entrapment to suicidal ideation in the current study. Although there are studies that support our finding (Forkmann & Teismann, 2017), there are also studies that found the moderating role of perceived burdensomeness (Li et al., 2021). Moreover, there are studies that revealed that perceived burdensomeness has a greater effect on suicidal ideation than thwarted belongingness (Chu et al., 2017).

While perceived burdensomeness had significant positive relationships with entrapment and suicidal ideation in this study, the non-moderating role of perceived burdensomeness may be explained by cultural differences. For example, studies on suicidal ideation among young adults in developed countries such as Scotland and Australia (Rainbow et al., 2023; Wetherall et al., 2022) found that perceived burdensomeness is one of the biggest suicide risk factors. Additionally, individualisation among young adults in developed countries or individualistic cultures is increased, and family ties have started to weaken at an early age. This situation causes a lack of social support, which may strengthen individuals' beliefs of being a burden to others (Hollingsworth et al., 2018). Most of the participants of this study were from the Southeast region of Turkey, which has a collectivist culture where social support networks and family ties are stronger than in other regions. These cultural factors might have influenced the effect of perceived burdensomeness on the entrapment-suicidal ideation relationship.

Another purpose of the study was to adapt the E-SF to Turkish culture and findings showed that the Turkish-adapted E-SF showed adequate psychometric properties. Specifically, the results of the structural validity analysis showed that both single-factor and two-factor structures of the E-SF were valid, indicating that it is compatible with the original scale and allows for a separate examination of internal entrapment and external entrapment (De Beurs et al., 2020).

Limitations

This study has some limitations. First, the study was conducted cross-sectionally. Since causality cannot be determined in cross-sectional studies, this limitation can be overcome with future experimental and longitudinal studies. Second, most of the sample of the study comprised community-dwelling young adults living in the south-eastern region of Turkey. Therefore, it is not possible to generalize the results of the study to all young adults in Turkey. Moreover, the fact that the sample consists only of young adults can be considered another limitation. There is a need for further research that includes other age levels in the sample groups such as high school students, middle and late adults from different geographical regions. Another limitation of this study is that the data were collected through self-report instruments. This may lead to well-established method biases such as social desirability. To overcome this limitation, the use of different research methods, such as observation and interviews in future studies may increase the reliability and validity of the data collected and can enhance our understanding regarding the utilisation of the IMV model in Turkish contexts. Another limitation is that it is possible to statistically account for other factors that might explain the observed phenomenon by including covariates (e.g. depression). In our study we intentionally abstained from such adjustments, based on Rogers et al.'s study (2018) which specifically investigated the influence of measuring suicidal ideation while depression was covaried out. They argue that the remaining aspect of suicidal ideation (after accounting for the covariance) is likely to lack a fundamental element of suicidal ideation as a construct, such as depressive cognitions, psychological pain, and passive thoughts related to ending one's life. This approach, based on the same reasoning, has also been adopted in comparable studies on the IMV model (e.g. Lucht et al., 2020).

Conclusion

The current study revealed that the adapted version of the E-SF is an easy-to-use scale that can be practically used to understand and assess the feelings of entrapment experienced by young adults. Besides, the main analyses supported the IMV model's assumptions, indicating its potential to be used within Turkish community samples. These findings hold critical importance for Turkey, where suicide rates have reached unprecedented levels in its history. The escalating trend underscores suicide as a significant public

health concern in Turkey, necessitating immediate attention through intervention programs. Notably, the IMV model has been successfully tested and endorsed for the first time in Turkey, emphasising the need to incorporate theoretically validated risk factors, such as defeat and entrapment, into suicide prevention strategies. Moreover, these results offer additional insights into understanding suicide risk factors potentially influenced by recent major economic crises and severe earthquakes in Turkey.

Notes

1. In the current study, we will be focusing on the development of suicidal thoughts, thus testing the motivational phase of the model.
2. OSF registration: https://doi.org/10.17605/OSF.IO/4AU9D.
3. These relationships will be assessed only for exploratory purposes; therefore, no specific hypotheses have been developed.

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Author contributions

Study conception/design; MBY, NT. Data collection; AK, NT. Analysis; AK. Drafting of manuscript; AK, NT, MBY. Statistical expertise; AK. Supervisor and Editing; MBY, NT. Administrative/technical/material support; AK, NT, MBY.

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