



Testing the assumptions of the integrated motivational-volitional model of suicidal behavior: Unraveling motivational moderators in the relationship between defeat, entrapment, and ideation

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Abstract

The present research employed a two-study design with distinct methodological phases and samples to examine associations between defeat, entrapment, and suicidal ideation within the Integrated Motivational-Volitional Model (IMV) of Suicidal Behavior. In Study 1 ($N=346$, 74.9% female, $M_{\text{age}} = 20.95$), the Short Defeat and Entrapment Scale (SDES) was adapted into Turkish to ensure its theoretical and cultural relevance. Study 2 ($N=397$, 75.8% female, $M_{\text{age}} = 21.25$) investigated the mediator role of entrapment in the relationship between defeat and suicidal ideation and the moderator roles of perceived burdensomeness, thwarted belongingness, and perceived social support in the relationship between entrapment and suicidal ideation. Results indicated that entrapment partially mediated the link between defeat and suicidal ideation. While perceived burdensomeness did not moderate the entrapment–suicidal ideation relationship, thwarted belongingness and perceived social support demonstrated positive and negative moderation effects, respectively. These findings contribute to the emerging IMV-based literature in Türkiye and extend the methodological tools available for suicide research in the context of young adulthood, a developmental group characterized by heightened vulnerability to suicidal thoughts and behaviors, underscoring the importance of addressing both individual vulnerabilities and social resources in prevention efforts.

Keywords Entrapment · Perceived burdensomeness · IMV model · Suicide · Türkiye

Introduction

Suicide is a major public health concern, with around 720,000 deaths reported annually worldwide (World Health Organization [WHO], 2024). Despite decades of prevention efforts, suicide rates continue to rise in many regions (Martinez-Ales et al., 2022), and predicting suicidal behavior remains challenging due to its multifaceted nature (Franklin et al., 2017). Although many risk factors have been

identified (Bilsen, 2018), effect sizes are consistently small, with no single factor emerging as dominant, underscoring the need to move beyond single predictors and focus on interactions among risk factors (Franklin et al., 2017). In response, growing attention has been given to psychological risk factors, theory testing, and improved risk assessment to inform prevention and intervention (O'Connor & Nock, 2014).

With 73% of suicides occurring in low- and middle-income countries (WHO, 2024), suicide constitutes a major public health concern in developing regions. Despite its upper-middle-income status, Türkiye remains vulnerable due to ongoing economic instability and social inequalities (World Bank, 2024; International Monetary Fund [IMF], 2024). In Türkiye, suicide rates have shown a gradual increase over time, with the crude suicide rate rising from 4.20 per 100,000 between 2001 and 2023 to 5.22 per 100,000 in 2024, with deaths rising from 2,933 to 4,460 (Turkish Statistical Institute [TurkStat], 2025a). Although

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this rate remains below the global average (9.2 per 100,000; WHO, 2024), the upward trend and increasing number of deaths indicate a concerning trajectory. Notably, a substantial proportion of suicide deaths (35.63%) occur among young people, particularly those aged 15–29 (TurkStat, 2025b), highlighting this group as a key population of concern in the Turkish context. Young people in Türkiye may be particularly vulnerable due to a combination of emotional problems, socioeconomic uncertainty, unemployment, academic pressures, and rapid social change, all of which have been identified as key stressors in Turkish samples (Akbulut-Zencirci et al., 2025; Arslan et al., 2024). Reflecting this trend, the meta-analysis by Karkin and Eskin (2023) reported wide-ranging prevalence rates of suicidal ideation (ranging from 2.5% to 42.5%) and suicidal attempts (2.2% to 11.5%) among Turkish young adults, based primarily on studies conducted in university-based samples.

Although there are local and national initiatives reflecting suicide prevention policies in Türkiye (e.g., the establishment of Provincial Suicide Prevention Committees and the implementation of National Mental Health Action Plans), prevention efforts have been noted to lack a comprehensive and sustainable structure (Özden & İpek, 2024; WHO, 2020). Prior research has also highlighted challenges in the implementation of mental health policies in Türkiye, including limited coordination across stakeholders, insufficient integration of community-based services, and gaps in long-term planning (Soygür, 2016). These limitations indicate that existing efforts may not fully address the complex and multifactorial nature of suicide risk. Accordingly, there is a need for a more systematic understanding of the psychological pathways underlying suicide risk in Türkiye, as evidence-based frameworks can inform the development of more targeted and culturally sensitive prevention and intervention strategies (Mann et al., 2021).

First introduced in depression research by Gilbert and Allan (1998), defeat and entrapment are now established as key mechanisms in suicidal ideation and behavior and show broad transdiagnostic relevance across depression, anxiety, and PTSD (Siddaway et al., 2015). Defeat involves feelings of failed struggle, powerlessness, and being overwhelmed, whereas entrapment reflects the perceived inability to escape an unbearable situation with no viable alternatives (Gilbert & Allan, 1998). Despite conceptual overlap with hopelessness and helplessness (Panagioti et al., 2013), defeat and entrapment show unique relevance to suicide-related outcomes (Forkmann et al., 2018; Höller et al., 2020; Taylor et al., 2011). These perceptions often offer a more nuanced understanding of an individual's internal experience than general distress, serving as important markers for clinical risk assessment (O'Connor & Kirtley, 2018). As emphasized by Sandford et al. (2022), systematically evaluating

defeat and entrapment enables CBT practitioners to use their core clinical skills more effectively in assessing, conceptualizing, and reducing suicide risk.

Within the Integrated Motivational–Volitional (IMV) model, defeat and entrapment have been discussed in terms of two different conceptualizations: a two-dimensional view and a unidimensional view. The two-dimensional conceptualization proposes that defeat and entrapment are distinct but related constructs. Supporting this view, scholars argued that defeat may lead to entrapment when coping efforts are unsuccessful, implying a sequential relationship between the two constructs (Rasmussen et al., 2010). Recent empirical findings tend to support this distinction, suggesting that defeat and entrapment are separable factors with unique contributions (DeBeurs et al., 2020; Rogerson et al., 2024). In contrast, the unidimensional conceptualization argues that defeat and entrapment share substantial variance and overlapping characteristics—particularly the perceived lack of escape—and may therefore represent a single underlying dimension (Griffiths et al., 2014; Taylor et al., 2011). From this perspective, the two constructs are not meaningfully distinguishable at the measurement level. Taken together, the literature reflects ongoing debate regarding whether defeat and entrapment are best understood as distinct yet related constructs or as indicators of a broader unified dimension, which warrants further investigation.

Expanding on their theoretical significance, defeat and entrapment are central to the motivational phase of the Integrated Motivational–Volitional (IMV) model of suicidal behavior, which delineates three distinct phases—pre-motivational (background factors and triggers), motivational (emergence of suicidal ideation), and volitional (transition from ideation to attempts)—to clarify the progression from suicidal thoughts to suicidal actions (O'Connor, 2011). Specifically, the motivational phase captures the psychological mechanisms preceding suicidal ideation and intent. During this phase, experiences of defeat and entrapment, shaped by individual and contextual moderators, play a central role in the development of suicidal ideation. This study centers on the motivational phase by investigating how defeat and entrapment contribute to suicidal thoughts and how specific moderators (i.e., perceived burdensomeness, thwarted belongingness, perceived social support) influence this relationship.

According to the IMV model, experiencing defeat and entrapment does not inevitably lead to suicidal ideation, but rather, this progression is shaped by certain motivational moderators (O'Connor & Kirtley, 2018). Within this framework, perceived burdensomeness (PB) and thwarted belongingness (TB) are particularly relevant because they influence whether entrapment becomes cognitively interpreted as inescapable and interpersonally consequential. PB

reflects the appraisal that one's continued existence imposes liability or strain on significant others, thereby conferring a sense of self-perceived liability and reduced self-worth and TB captures chronic unmet needs for reciprocal care and social connectedness, contributing to feelings of alienation and relational disintegration (Joiner, 2005). When entrapment co-occurs with elevated perceived burdensomeness and thwarted belongingness, individuals may be more likely to construe their situation as both inescapable and interpersonally consequential, which could increase the probability that entrapment is translated into suicidal ideation (O'Connor, 2011). This interaction has been consistently supported by both cross-sectional and longitudinal research, with burdensomeness emerging as a particularly relevant and reliable construct (Forkmann & Teismann 2017; Li et al., 2021).

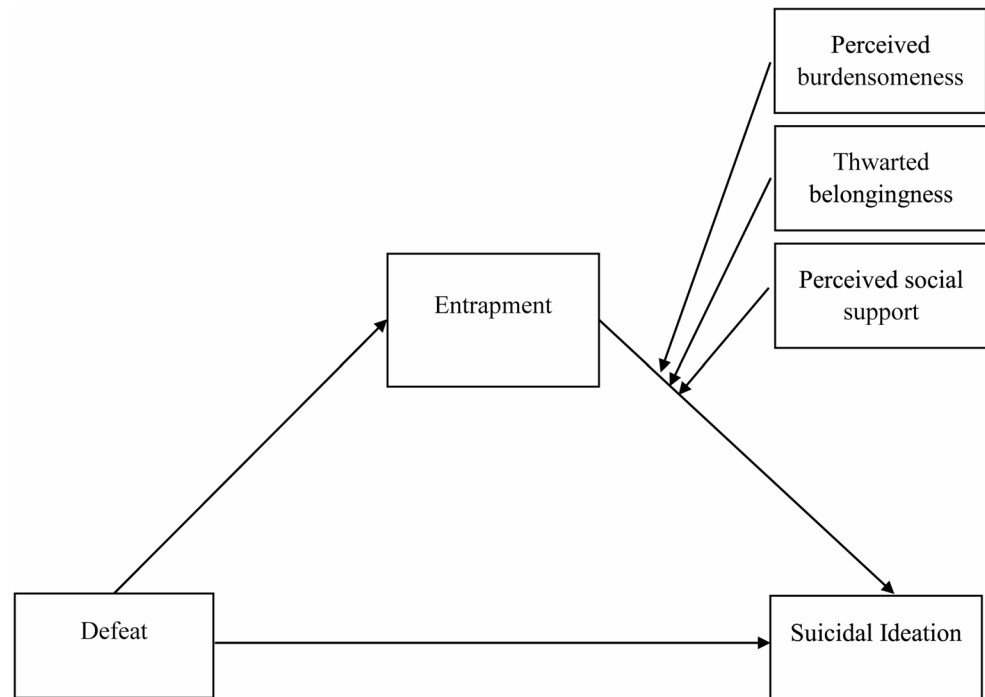
Within the context of the IMV, perceived social support (PSS) can operate as another motivational moderator, influencing whether feelings of defeat and entrapment progress to suicidal ideation (O'Connor & Kirtley, 2018). Rather than merely reflecting the absence of TB, PSS represents the perceived accessibility of supportive relational resources. In contrast to vulnerability-related constructs such as PB and TB, higher levels of PSS are theorized to weaken the cognitive construal of entrapment as absolute or permanent, thereby disrupting the pathway from defeat and entrapment to suicidal ideation, which was supported by empirical findings (Li et al., 2021). In addition, PSS may buffer suicide risk by broadening perceived coping options and restoring a sense of interpersonal value, thereby counteracting vulnerability processes such as perceived burdensomeness and social disconnection (Kleiman & Liu, 2013). In this sense, PSS may buffer risk not only by enhancing belonging but also by broadening perceived coping options and restoring a sense of interpersonal value, underscoring its regulatory role within the IMV framework.

By offering testable hypotheses, the IMV model seeks to address the complexity of suicidal behavior by making a distinction between suicidal thoughts and actions. Although the model has received substantial empirical support in Western contexts, with numerous studies consistently identifying defeat and entrapment as core precursors to suicidal ideation (e.g., O'Connor et al., 2012; Owen et al., 2018; Teismann & Forkmann, 2017), it is essential to evaluate its core assumptions within Turkish context, given that the suicide-related risk and protective factors may vary across cultural contexts (Turecki et al., 2019). Such an investigation can enhance the IMV's global relevance and acceptability by demonstrating its theoretical applicability beyond Western populations. While previous studies within the context of Türkiye (e.g., Akın et al., 2013; Türk et al., 2024) have

adapted the 16-item Defeat Scale (Gilbert & Allan, 1998) and 4-item Entrapment Scale (DeBeurs et al., 2020), the cultural and theoretical relevance of Griffiths et al.'s (2015) Short Defeat and Entrapment Scale (SDES) has yet to be examined in the Turkish context.

The selection of the SDES in the current study is supported by practical and methodological considerations. Specifically, it reduces participant burden without compromising psychometric integrity (Griffiths et al., 2015; Höller et al., 2020). This is particularly important in studies involving sensitive constructs such as defeat, entrapment, and suicidal ideation, where lengthy assessments may increase fatigue and reduce response quality. Moreover, the SDES was developed to address methodological inconsistencies associated with the use of unvalidated short forms of the original defeat and entrapment scales, which have been widely employed in prior research (Griffiths et al., 2015). Empirical evidence suggests that the SDES retains strong reliability and validity, with no meaningful loss of predictive or criterion validity relative to the full-length measures (Griffiths et al., 2015; Höller et al., 2020). Despite these strengths, a validated Turkish version of the SDES is not currently available, highlighting an important gap in the literature and underscoring the need for its cultural adaptation and psychometric evaluation in this context.

A key consideration in the present study concerns the empirical distinguishability of defeat and entrapment. Given the ongoing debate, it is important to examine both the factorial structure of the SDES and the extent to which these constructs are associated with suicidal ideation. Recent validation studies have challenged the unidimensional assumption, with evidence suggesting that a two-factor solution may provide improved fit (Höller et al., 2020). Accordingly, the present study does not assume a priori that defeat and entrapment are empirically distinct; however, consistent with the IMV framework, we examine their associations as theoretically distinguishable constructs, while acknowledging that their empirical separation may be limited. Importantly, the present study does not aim to establish the factorial independence of defeat and entrapment, but rather to examine whether associations consistent with the IMV framework can be observed. To this end, the present research employed a two-study design using samples of young adults. In Study 1, data were used to adapt the SDES into Turkish and to examine its convergent validity through associations with related constructs, including mental well-being and depression. In Study 2, data were used to examine associations consistent with the proposed relationships of the IMV model, as illustrated in Fig. 1. The hypotheses of the present study are outlined below.

Fig. 1 Hypothetical model of present study

Hypothesis 1 (H_1): Defeat will be directly and positively related to suicidal ideation.

Hypothesis 2 (H_2): Entrapment will mediate the relationship between defeat and suicidal ideation.

Hypothesis 3 (H_3): Perceived burdensomeness will moderate the relationship between entrapment and suicidal ideation in such a way that the relationship will be stronger at higher levels of perceived burdensomeness.

Hypothesis 4 (H_4): Thwarted belongingness will moderate the relationship between entrapment and suicidal ideation in such a way that the relationship will be stronger at higher levels of thwarted belongingness.

Hypothesis 5 (H_5): Social support will moderate the relationship between entrapment and suicidal ideation in such a way that the relationship will be weaker at higher levels of social support.

Method

This study employed a cross-sectional design (Fraenkel & Wallen, 2006) and comprised two independent samples. Study 1 aimed to evaluate the psychometric properties of the Turkish adaptation of the Short Defeat and Entrapment Scale (SDES), while Study 2 examined the hypothesized relationships within the IMV framework.

Study 1: Confirmatory factor analysis for the short defeat and entrapment scale (SDES)

Study group 1

In Study Group 1, the convenience sampling method was employed to recruit 346 participants, of whom 259 (74.9%) were female and 87 (25.1%) were male. Participants' ages ranged from 18 to 34, with a mean of 20.95 ($SD=2.56$). In terms of residency, 142 (41%) participants reported that they reside in provinces, and 204 (59%) reside in metropolitan areas, based on the categorization of the cities by the Turkish Statistical Institute (TurkStat, 2021).

Materials

Short Defeat and Entrapment Scale (SDES). The SDES (Griffiths et al., 2015) is an 8-item scale that measures the intensity of the feelings of defeat and entrapment, each containing 4 items. While the defeat subscale is unidimensional, the entrapment subscale consists of two subscales: internal and external, each having 2 items. A sample item for defeat is "I feel that there is no fight left in me." Sample items for internal and external entrapment are "I feel that I am one of life's losers." and "I can see no way out of my current situation", respectively. The items are designed on a 5-point Likert-type scale (0=not at all, 4=extremely like me). The total score can range between 0 and 32, with higher scores indicating more severe feelings of defeat and entrapment. In the original scale, validity evidence was offered by

confirmatory factor analysis (CFA) and by the measures of depression, anxiety, and hopelessness. Internal consistency was excellent ($\alpha=0.91$). Additional reliability evidence was provided through the test-retest method over a 12-month period ($r=.88$).

In this study, the SDES was adapted to Turkish by applying the well-known forward translation-back translation method. During forward translation, two different academics from the field of Guidance and Psychological Counseling translated the original items into Turkish. Then, one academic from the same field translated the items that best reflected the original meaning back from Turkish to English. The original (Turkish) and back-translated versions were compared, and minor changes were made. Lastly, the translated items were reviewed by a linguistic expert who is an ongoing Ph.D. student in Turkish Language to ensure grammatical accuracy.

Results revealed that both unidimensional and two-dimensional models of defeat and entrapment demonstrated acceptable fit; however, the two-factor solution showed a marginally better fit in the current sample. Convergent validity evidence was obtained with measures of depression and mental well-being. The internal consistency for both subscales was acceptable ($\alpha_{\text{defeat}}=0.90$, $\alpha_{\text{entrapment}}=0.78$) for the sample used in Study 1.

Depression, Anxiety, Stress Scale-Short Form (DASS-21-SF). The DASS-21-SF (Henry & Crawford, 2005) assesses negative emotional states, including depression, anxiety, and stress. The DASS-21 consists of three subscales, each containing 7 items. Sample items for depression, anxiety, and stress subscales are “I felt that I had nothing to look forward to,” “I was aware of dryness of my mouth,” and “I found it hard to wind down,” respectively. Each item is rated on a 4-point Likert-type scale (0=not appropriate for me, 3=very appropriate for me). The total score for each subscale can range between 0 and 21, with higher scores indicating higher levels of distress. Internal consistency of the subscales was excellent ($\alpha_{\text{range}}=0.90$ to 0.97).

Yilmaz et al. (2017) adapted the DASS-21-SF in Turkish. The same structure in the original version was validated through CFA, and internal consistency was adequate for each subscale ($\alpha_{\text{range}}=0.76$ to 0.82). In the current study, only the depression subscale was used, and the internal consistency was excellent ($\alpha=0.88$). Accordingly, the depression subscale of the DASS-21-SF was utilized to test the convergent validity of the SDES in Study 1.

The Short Warwick-Edinburgh Mental Well-Being Scale (SWEMWBS). The SWEMWBS (Stewart-Brown et al., 2009) assesses individuals' overall level of mental well-being. It is a unidimensional scale with 7 items rated on a 5-point Likert scale (1=strongly disagree, 5=strongly agree). A sample item for SWEMWBS is “I’ve been feeling

relaxed.” The total scores can range between 7 and 35, with higher scores indicating higher levels of mental well-being. To assess reliability, the person separation index, an equivalent of alpha, was used, and this value was found as 0.85.

Demirtaş and Baytemir (2019) adapted the SWEMWBS in Turkish. The original unidimensional structure was retained through CFA. Convergent validity evidence was offered with measures of mental well-being, happiness, and hope, and the internal consistency was good ($\alpha=0.84$). In the current study, the scale exhibited good internal consistency ($\alpha=0.87$). In the current study, the SWEMWBS was included in the first phase of the research (Study 1) to establish the convergent validity of the Turkish adaptation of the SDES.

Study 2: Mediation and moderated mediation analyses

Study group 2

Data were collected from 397 young adults using the convenience sampling method. The sample consisted of 301 females (75.8%) and 96 males (24.2%). A majority of the participants resided in provinces ($n=246$, 61.96%), while the remaining portion resided in metropolitan areas ($n=151$, 38.04%). The participants' ages ranged from 18 to 40 years, with a mean of 21.25 ($SD=2.73$).

Materials

Short Defeat and Entrapment Scale (SDES). The SDES, which was adapted into Turkish in Study 1, was also used in Study 2 to test the proposed IMV-based model. The internal consistency for both subscales was acceptable ($\alpha_{\text{defeat}}=0.92$, $\alpha_{\text{entrapment}}=0.77$) in Study 2.

Interpersonal Needs Questionnaire-10 (INQ-10). Using 10 items rated on a 7-point scale, the INQ-10 (Bryan, 2011) assesses two key constructs from the interpersonal theory of suicide: perceived burdensomeness and thwarted belongingness. Sample items for perceived burdensomeness and thwarted belongingness are “The people in my life would be happier without me” and “I feel disconnected from other people”, respectively. Each subscale includes 5 items, yielding scores that range from 5 to 35, with higher scores indicating greater levels of the respective construct. The two-factor structure was supported by CFA. Convergent validity evidence was provided with measures of depression, hopelessness, and suicidal ideation. Each subscale showed good internal consistency ($\alpha_{\text{burdensomeness}}=0.81$, $\alpha_{\text{belongingness}}=0.86$).

Eskin et al. (2020) adapted the INQ-10 in Turkish, confirming its two-factor structure using exploratory factor analysis. For convergent validity evidence, the measures of depression, stress, and hopelessness were used. The internal

consistency of belongingness ($\alpha=0.90$) was excellent, and the consistency of burdensomeness ($\alpha=0.79$) was adequate. In the current study, the INQ-10 demonstrated excellent internal consistency for burdensomeness ($\alpha=0.91$) and acceptable consistency for belongingness ($\alpha=0.73$).

Multidimensional Scale of Perceived Social Support (MSPSS). The MSPSS (Zimet et al., 1988) assesses the perception of social support across three subscales (family, friends, and significant other), each containing 4 items. Sample items for family, friends, and significant other subscales are “My family tries to help me”, “I can count on my friends when things go wrong”, and “There is a special person who is around when I am in need”, respectively. It uses a 7-point Likert scale (1=strongly disagree, 7=strongly agree). Total scores can range between 12 and 84, with higher scores reflecting greater perceived social support. The three-factor structure of the MSPSS was supported by CFA. Internal consistency for the subscales was good ($\alpha_{\text{range}}=0.85$ to 0.88), and the consistency for the total scale ($\alpha=0.91$) was excellent.

Eker et al. (2001) adapted the MSPSS in Turkish and determined that the scale exhibits excellent psychometric properties. Consistent with the original study, the three-factor structure was validated in the Turkish version via exploratory factor analysis. Convergent validity evidence was provided by the measures of hopelessness, loneliness, and negative social interaction, and the internal consistency was excellent ($\alpha=0.91$). In the current sample, there was excellent internal consistency ($\alpha=0.91$).

Suicide Probability Scale (SPS)/Suicide Ideation Subscale. The SPS (Cull & Gill, 1982) assesses the suicide risk among adolescents and adults. It has four subscales: hopelessness, suicide ideation, negative self-evaluation, and hostility. A sample item for the suicide ideation subscale of SPS is “I think that no one will miss me when I am gone.” The SPS consists of 36 items rated on a 4-point Likert-type scale (1=none or a little of the time, 4=most or all of the time), and the total score can range between 36 and 144, with higher scores indicating a greater risk of suicide. The scale’s reliability was supported by internal consistency ($\alpha=0.93$) and test-retest reliability over a 3-week period ($r=.92$).

The SPS was adapted into Turkish by Durak-Batigün and Hisli-Şahin (2018), confirming the four factor structure. The internal consistency of the subscales was adequate to good ($\alpha_{\text{range}}=0.71$ to 0.87). In the present study, the internal consistency of suicide ideation subscale was good ($\alpha=0.80$).

Procedure

Data for Study 1 and Study 2 were collected separately through anonymous online surveys using Google Forms. Study 1 included three instruments, and Study 2 included

four instruments, along with demographic information forms. The survey links were distributed via social media platforms (WhatsApp and Facebook), and participants were encouraged to share the link with others who might be interested in participating. Additionally, through direct contact with academics, the survey links were shared with undergraduate and graduate students. Data for both studies were collected between October and November 2025. Participants were not provided with any incentives, and informed consent regarding voluntariness was obtained on the first page of the online form. There was no missing data, as all survey items were set as required responses to minimize incomplete submissions. However, participants were explicitly informed that they could withdraw from the study at any point without penalty and were not obligated to complete any part of the survey they found distressing. Given that some instruments included sensitive content (e.g., items related to depression and suicidal ideation), additional precautionary measures were implemented, including providing contact information for the researchers so that participants could reach out if they experienced discomfort or had concerns related to the study. Participants were also informed that the researchers did not provide mental health services and were directed to appropriate support resources where needed. Participants were also reminded of their right to discontinue participation at any time, and no data were recorded for incomplete submissions. Furthermore, participants were provided with information on available support resources, including the contact information of university counseling centers, local hospitals, and the national suicide helpline in Türkiye. To ensure confidentiality, no identifiable data were collected. The only inclusion criterion was being 18 years of age or older. Ethical approval for the study was obtained from the Zonguldak Bülent Ecevit University Human Subjects Ethics Committee (Approval No: 653790).

Data analysis

In Study 1, data were analyzed to examine the factorial structure of the SDES using confirmatory factor analysis (CFA) with the maximum likelihood method. Prior to the analysis, key assumptions were evaluated. The sample size was considered adequate based on the rule of $N>200$ (Kline, 2011). Univariate normality was assessed using skewness and kurtosis values, with no violations beyond the ± 3 thresholds (Kline, 2011). Univariate outliers were examined via Z scores, and no cases exceeded ± 3.29 ($p<.001$, two-tailed) (Tabachnick & Fidell, 2013). Multivariate normality was tested using Mardia’s kurtosis test, which was significant (113.43, $p<.001$), indicating a violation. To address this issue, a bootstrapping procedure with 5,000 samples and 95% confidence intervals was employed (Byrne, 2013).

In Study 2, data were analyzed to test the proposed moderated mediation model. Prior to the analyses, key assumptions were evaluated, including multicollinearity, univariate and multivariate normality, and multivariate outliers. Similar to Study 1, only the assumption of multivariate normality was violated; therefore, a bootstrapping procedure was employed (Byrne, 2013). Sample size adequacy for the moderated mediation analysis was assessed using G*Power (version 3.1.9.7) with parameters of $f^2 = 0.02$, $\alpha = 0.05$, power $(1 - \beta) = 0.80$, and five predictors. The analysis indicated a required minimum sample size of 395, with actual power estimated at 0.80, suggesting that the sample size was sufficient.

The mediation and moderated mediation analyses were conducted using SPSS 25 and JASP. Mediation (H1 and H2) and moderated mediation effects (H3, H4, and H5) were tested using PROCESS Models 4 and 14, respectively (Hayes, 2022). Model 4 was used to examine whether the effect of defeat on suicidal ideation operates through entrapment. Model 14 was employed to assess whether this indirect effect varies as a function of the moderators (perceived burdensomeness, thwarted belongingness, and perceived social support), while accounting for the direct association between entrapment and suicidal ideation (Hayes, 2022).

Results

Table 1 presents the means, standard deviations, normality indices, and bivariate correlations among the study variables. For Study 1, defeat and entrapment were strongly and positively correlated ($r = .73$, $p < .01$). Both defeat and

entrapment were also positively associated with depression ($r = .70$, $p < .01$ for both) and negatively associated with mental wellbeing ($r = -.52$ and $r = -.53$, respectively, $p < .01$). In Study 2, defeat and entrapment were again strongly correlated ($r = .76$, $p < .01$). Both variables showed significant positive correlations with perceived burdensomeness ($r = .53$ and $r = .50$, $p < .01$), thwarted belongingness ($r = .50$ for both, $p < .01$), and suicidal ideation ($r = .43$ and $r = .40$, $p < .01$). Additionally, perceived burdensomeness and thwarted belongingness were moderately correlated ($r = .43$, $p < .01$). Suicidal ideation was positively associated with perceived burdensomeness ($r = .48$, $p < .01$) and thwarted belongingness ($r = .40$, $p < .01$), and negatively associated with perceived social support ($r = -.45$, $p < .01$).

Results of the confirmatory factor analysis (CFA) for SDES

Two separate CFAs were conducted to see whether the single-factor or two-factor structure of the SDES yields a better fit. Results indicated that both single factor ($\chi^2/df = 4.26$, RMSEA = 0.10, SRMR = 0.04, TLI = 0.94, CFI = 0.96, GFI = 0.97) and two-factor structure ($\chi^2/df = 3.95$, RMSEA = 0.09, SRMR = 0.03, TLI = 0.95, CFI = 0.97, GFI = 0.97) satisfactorily fit the data (Byrne, 2013; Barrett, 2007). For the single-factor solution, the item loadings ranged between 0.41 and 0.88. For the two-factor solution, the range was 0.48 to 0.88. Model fit was also evaluated by Akaike Information Criterion (AIC). The two-factor model (AIC = 7366.16) demonstrated better fit compared to the one-factor model (AIC = 7399.45), with a ΔAIC of 33.29, indicating strong evidence in favor of the two-factor model (Burnham &

Table 1 Descriptive statistics and bivariate associations among study variables

	Study 1 (N=346)				Study 2 (N=397)					
	1	2	3	4	5	6	7	8	9	10
1. Defeat	-									
2. Entrapment	0.73*	-								
3. Depression	0.70*	0.70*	-							
4. Mental well-being	-0.52	-0.53	-0.54	-						
5. Defeat					-					
6. Entrapment					0.76*	-				
7. Perceived burdensomeness					0.53*	0.50*	-			
8. Thwarted belongingness					0.50*	0.50*	0.43*	-		
9. Suicide ideation					0.43*	0.40*	0.48*	0.40*	-	
10. Perceived social support					-0.43*	-0.43	-0.44*	-0.56*	-0.45*	-
Mean	4.84	5.77	6.33	24.25	5.14	5.99	8.7	16.3	12.05	59.7
Std. deviation	4.26	3.82	4.81	5.44	4.45	3.83	5.78	6.31	4.79	16.65
Skewness	0.58	0.24	0.52	-0.05	0.71	0.38	1.79	0.19	0.95	-0.44
Kurtosis	-0.64	-0.74	-0.49	-0.35	-0.32	-0.35	2.73	-0.34	0.28	-0.35
Possible range	0–16	0–16	0–21	7–35	0–16	0–16	5–35	5–35	10–40	12–84
Actual range	0–16	0–16	0–20	7–35	0–16	0–16	5–33	5–35	7–28	12–84
Cronbach's alpha	0.90	0.78	0.88	0.87	0.92	0.77	0.91	0.73	0.80	0.91

* $p < .001$

Table 2 Turkish SDES with factor loadings

Item No	Original item	Turkish version	Factor loading (one-factor)	Factor loading (two-factor)
d1	I feel defeated by life.	Kendimi hayat karşısında yenik hissediyorum.	0.87	0.87
d2	I feel that there is no fight left in me.	Mücadele edecek gücümün kalmadığımı hissediyorum.	0.85	0.85
d3	I feel that I am one of life's losers.	Kendimi hayat karşısında başarısız hissediyorum.	0.86	0.86
d4	I feel powerless	Güçsüz hissediyorum.	0.85	0.85
e1	I would like to escape from my thoughts and feelings.	Duygu ve düşüncelerimden kaçmak istiyorum.	0.59	0.61
e2	I would like to get away from who I am and start again.	Kendimden kaçmak ve her şeye sıfırdan başlamak istiyorum.	0.64	0.65
e3	I would like to get away from other more powerful people in my life.	Hayatımdaki benden daha güçlü kişilerden uzaklaşmak istiyorum.	0.45	0.46
e4	I can see no way out of my current situation.	İçinde bulunduğum durumdan bir çıkış yolu göremiyorum.	0.78	0.80

Anderson, 2002). Based on fit indices, AIC, and absence of multicollinearity between defeat and entrapment ($r = .73$, $p < .001$) based on Tabachnick and Fidell's (2013) criterion of $r < .90$, utilizing the two-factor conceptualization of SDES

Table 3 The indirect effect of defeat on suicide ideation through entrapment

	95%CI		
	Effect	LLCI	ULCI
Defeat $\rightarrow$ Entrapment $\rightarrow$ Suicide Ideation	0.12*	0.002	0.24
Defeat $\rightarrow$ Entrapment	0.77*	0.60	0.71
Entrapment $\rightarrow$ Suicide Ideation	0.16*	0.02	0.37
Total Effect	0.43*	0.36	0.57
Direct Effect	0.31*	0.18	0.48
Indirect Effect	0.12*	0.002	0.24

* $p < .05$

appeared more feasible in the main analyses. The factor loadings of Turkish SDES are presented in Table 2.

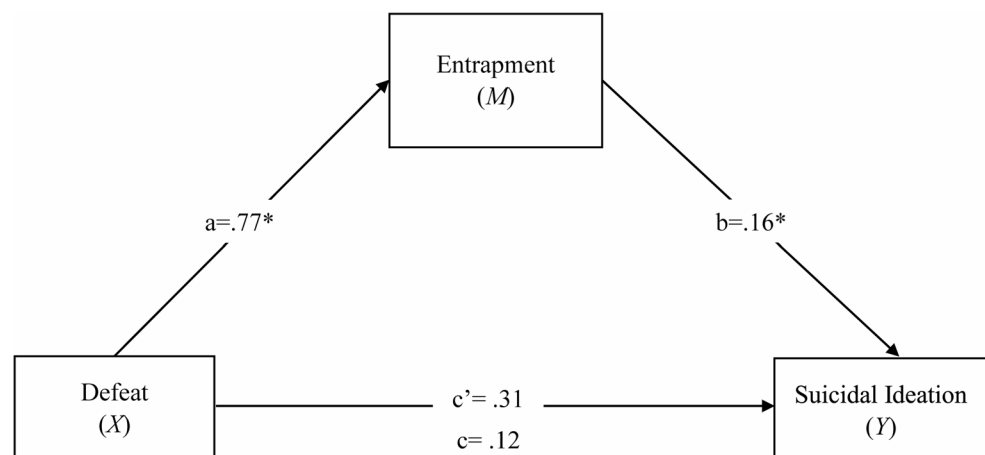
Results of mediation analysis

The mediation analysis was conducted using the PROCESS Macro, Model 4 (Hayes, 2022), to test H_1 and H_2 . Results indicated that the direct effect of defeat on suicidal ideation was significant (total effect, $\beta = 0.43$, $p < .05$, $CI [0.36, 0.57]$), which confirmed H_1 . The direct effects of defeat on entrapment ($\beta = 0.77$, $p < .05$, $CI [0.60, 0.71]$) and of entrapment on suicidal ideation ($\beta = 0.16$, $p < .05$, $CI [0.02, 0.37]$) were significant, allowing for conducting further mediation analysis. The proposed model in mediation analysis is presented in Fig. 2.

The indirect effect of defeat on suicidal ideation through entrapment was significant ($\beta = 0.132$, $p < .05$, $CI [0.002, 0.24]$), implying that entrapment partially mediated this relationship. Therefore, H_2 was confirmed. The results of the mediation analysis with direct, indirect, and total effects are presented in Table 3.

Results of moderated mediation analyses

To test H_3 , H_4 , and H_5 , the moderated mediation analyses were conducted using PROCESS Macro, Model 14

Fig. 2 The results of mediation analysis, * $p < .05$. Note. c' =Total effect, c =Direct effect

(Hayes, 2022). Three separate analyses were conducted to see whether perceived burdensomeness (PB), thwarted belongingness (TB), and perceived social support (PSS) moderated the relationship between entrapment and suicidal ideation within the presence of defeat as the predictor variable. The interaction effect of entrapment and PB on suicidal ideation was not statistically significant ($\beta=0.006$, $p > .05$, CI $[-0.01, 0.03]$). In contrast, the interaction effects of entrapment and TB ($\beta=0.02$, $p < .05$, CI $[0.002, 0.03]$), and entrapment and PSS ($\beta = -0.01$, $p < .05$, CI $[-0.02, -0.004]$) on suicidal ideation were significant. That is, while TB positively influenced the relationship between entrapment and suicidal ideation, PSS had a negative effect on this relationship. Therefore, H3 was rejected, whereas H4 and H5 were confirmed. Additionally, the direct effects of PB ($\beta=0.26$, $p < .05$, CI $[0.36, 0.57]$), TB ($\beta=0.18$, $p < .05$, CI $[0.10, 0.25]$), and PSS ($\beta = -0.10$, $p < .05$, CI $[-0.02, -0.004]$) on suicidal ideation were significant. The results of moderation analyses are presented in Table 4.

A visual examination of the simple slopes plotted at three levels (one SD below the mean, at the mean, and one SD above the mean) illustrates distinct conditional patterns for TB and PSS, whereas no clear moderating pattern is evident for PB. For TB, the graph displays a steeper gradient at average and high levels, suggesting that the positive relationship between entrapment and suicidal ideation appears stronger when TB is elevated. Conversely, at lower levels of TB, the regression lines tend to flatten, indicating a relatively weaker relationship. Regarding PSS, the visual trend exhibits a steeper slope at low and average levels, whereas the regression line is notably flatter at higher levels. This

pattern suggests that the relationship between entrapment and suicidal ideation weakens as perceived social support increases. The figures depicting these visual trends are provided in Fig. 3.

Discussion

Study 1: Scale validation

Study 1 evaluated the psychometric properties of the SDES (Griffiths et al., 2015) among Turkish young adults. A key finding was that both the single-factor and two-factor SDES demonstrated acceptable psychometric properties; however, the two-factor structure showed superior fit indices, indicating a comparatively stronger representation of the data. This finding supports the interpretation that although defeat and entrapment share substantial variance, they may capture partially distinct psychological processes—consistent with theoretical accounts that position defeat as an antecedent of entrapment (O'Connor, 2011; O'Connor & Kirtley, 2018). At the same time, entrapment itself has often been conceptualized as a unidimensional construct and operationalized accordingly in several studies (e.g., Taylor et al., 2011; Tucker et al., 2016; Türk et al., 2024), with evidence indicating its ability to distinguish individuals with and without a history of suicide attempts (Rasmussen et al., 2010). However, other findings suggest that internal and external entrapment may show differential associations with suicidal outcomes—for instance, internal entrapment, but not external entrapment, has been found

Table 4 Moderator Effect of PB, TB and PSS*

	coeff.	SE	t	p	95%CI	
					LLCI	ULCI
Moderator Effect of PB						
Constant	10.98	0.45	24.44	<0.05	10.1	11.87
Defeat	0.19	0.07	2.58	<0.05	0.60	0.71
Entrapment	0.11	0.08	1.33	>0.05	0.02	0.37
PB	0.26	0.05	4.97	<0.05	0.36	0.57
Entrapment*PB	0.006	0.009	0.70	>0.05	-0.01	0.24
Moderator Effect of TB						
Constant	10.61	0.44	23.85	<0.05	9.74	11.49
Defeat	0.24	0.07	3.14	<0.05	0.09	0.39
Entrapment	0.12	0.08	1.38	>0.05	-0.05	0.30
Thwarted Belongingness	0.18	0.04	4.50	<0.05	0.10	0.25
Entrapment*TB	0.02	0.008	2.13	<0.05	0.002	0.03
Moderator Effect of PSS						
Constant	10.59	0.43	24.60	<0.05	9.75	11.43
Defeat	0.23	0.07	3.17	<0.05	0.09	0.37
Entrapment	0.07	0.08	0.90	>0.05	-0.09	0.24
Social Support	-0.09	0.01	-6.67	<0.05	-0.12	-0.06
Entrapment*PSS	-0.01	0.003	-3.32	<0.05	-0.02	-0.004

*PB perceived burdensomeness, TB thwarted belongingness, PSS perceived social support

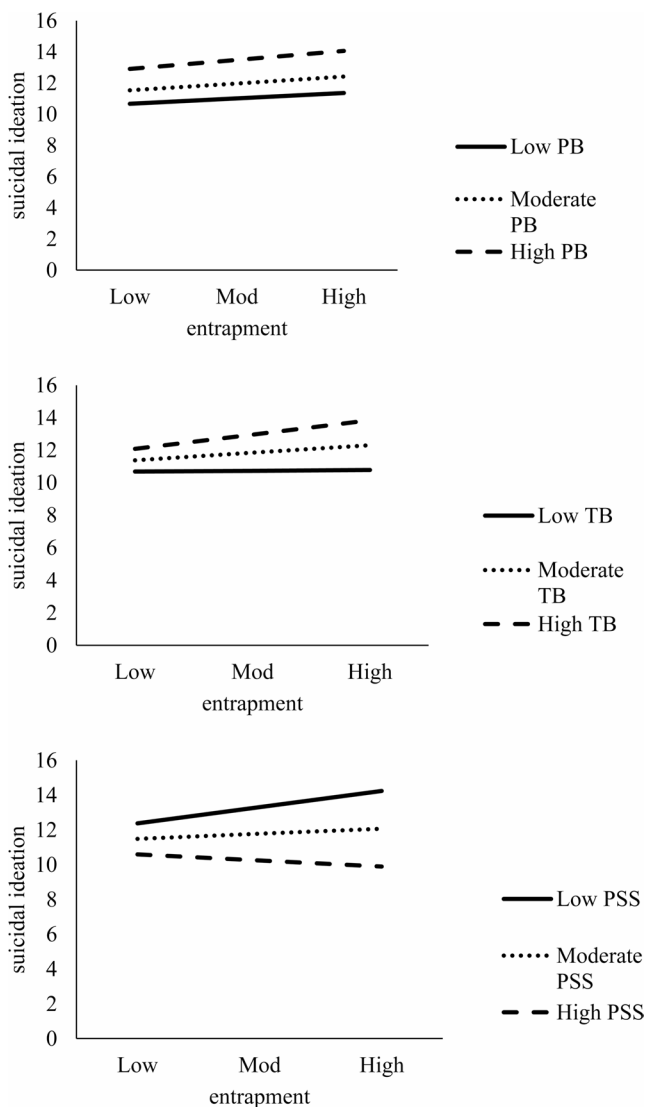


Fig. 3 Moderating effects of perceived burdensomeness (PB), thwarted belongingness (TB) and perceived social support (PSS)

to mediate the association between defeat and suicidal ideation (Owen et al., 2018), while some studies indicate that both forms represent related yet distinguishable clusters (Forkmann et al., 2018). Given these mixed results (Cramer et al., 2019), future research may benefit from examining whether internal and external entrapment function differently across contexts or from identifying potential moderators that clarify their respective roles in suicidal thoughts and behaviors.

Study 2: Model testing

Study 2 aimed to examine the relationships between defeat, entrapment, perceived burdensomeness, thwarted belongingness, perceived social support, and suicidal ideation in a sample of Turkish young adults. The results provided

support for associations consistent with the IMV framework. The results demonstrated that PB did not moderate the relationship between entrapment and suicidal ideation, TB and PSS showed significant moderating effects, with TB strengthening and PSS attenuating this association. In addition, the findings revealed that both defeat and entrapment were significantly associated with higher levels of depression and lower levels of mental wellbeing, consistent with existing literature linking these experiences to adverse mental health outcomes (Taylor et al., 2011; Griffiths et al., 2014).

The IMV model argues that entrapment has a mediating role in the relationship between defeat and suicidal ideation (O'Connor & Kirtley, 2018), which was supported by the findings of the current study. Evidence widely supports this result (Forkmann & Teismann, 2017; Li et al., 2021). That is, when an individual feels powerless or humiliated in the face of difficult life events (Gilbert & Allan, 1998), the possible pathway to suicidal ideation can be facilitated by the perception that there is no escape from those feelings. As a result, thinking about suicide might be one possible way to deal with negative emotions (Baumeister, 1990). This can be particularly salient during young adulthood, a time of major life decisions and identity challenges (Schwartz et al., 2013), where distress may seem insurmountable, and suicide is perceived as a way out. In addition, the mediating role of entrapment also reinforces its conceptual distinction from defeat, as opposed to reflecting a unidimensional structure (Griffiths et al., 2015). Therefore, the findings of the current study expand on the ongoing discussion about commonalities and divergences between defeat and entrapment (e.g., Forkmann et al., 2018; Gilbert & Allan, 1998; Griffiths et al., 2015).

Another finding was that although perceived burdensomeness (PB) did not moderate the relationship between entrapment and suicidal ideation, it emerged as a significant direct predictor of suicidal ideation. While this pattern contrasts with findings from Western samples (Ordóñez-Carrasco et al., 2022), it aligns with evidence from Türkiye (Türk et al., 2024), showing that PB predicts suicidal ideation directly but does not moderate the entrapment–ideation pathway. PB refers to the belief that one is a burden to others, which can create feelings of worthlessness and shame (Joiner, 2005). Moreover, PB can be economic, emotional, or situational, but often reflects economic concerns (Hill & Pettit, 2016). In Türkiye, many young adults struggle with unemployment and future uncertainty (Yavuzaslan et al., 2016), which may be perceived as defeat, mainly due to their association with status loss, financial strain, unemployment, and inequality (Lee & Park, 2021). Therefore, in a collectivist culture like Türkiye, PB might be operating as an independent cognitive risk factor rather

than a conditional amplifier of the entrapment-suicidal ideation relationship. Alternatively, it is possible that limited variability and generally moderate levels of entrapment within the current sample (i.e., a non-clinical university students) might have constrained the detection of an interaction effect. Under these conditions, PB and entrapment may function as independent, additive predictors rather than interacting processes. Lastly, the non-significant moderating effect of perceived burdensomeness (PB) should be interpreted with caution in light of statistical power considerations, as interaction effects typically require larger sample sizes to be reliably detected.

Thwarted belongingness (TB) refers to the unmet need for meaningful social connections (Joiner, 2005), whereas perceived social support (PSS) reflects the availability and adequacy of support from one's network (Zimet et al., 1988). Consistent with the IMV model, the results showed that the effect of entrapment on suicidal ideation was stronger at higher levels of TB and weaker at higher levels of PSS. While prior studies have supported TB as a motivational moderator (Türk et al., 2024), non-significant findings have also been reported (Forkmann & Teismann, 2017; Wetherall et al., 2022). One explanation is that young adulthood involves academic pressure, competition, and interpersonal stress, which may foster conflict, isolation, and heightened vulnerability to defeat and entrapment (Mortier et al., 2017). In contrast, as expected, PSS buffered the associations between defeat, entrapment, and suicidal ideation, consistent with prior findings (Owen et al., 2022). Social support may thus protect individuals by reducing self-blame and preventing distress from being experienced as inescapable.

Lastly, both PB and TB exerted a significant impact on suicidal ideation across all analyses. Although the effect of PB appeared numerically larger than TB, no formal comparison between coefficients was conducted. Therefore, this difference should be interpreted with caution. Nevertheless, this pattern is broadly consistent with a meta-analysis investigating 66 cross-sectional studies, concluding that PB had a more substantial direct effect on suicidal ideation (Ma et al., 2016). This can be explained, in part, by the measurement characteristics of the TB, as Ma et al. (2016) suggested that the items belonging to the thwarted belongingness dimension do not entirely capture the essence of the structure. In a study conducted with a group of young adults residing in Turkey, it was also revealed that PB (compared to TB) yielded stronger correlations with suicidal ideation (Türk et al., 2024). Although the current findings underscore the individual contributions of PB and TB, future research would benefit from examining their potential interaction effect to determine whether a combined effect more strongly predicts suicidal ideation, especially given that existing evidence on

the predictive value of this interaction remains mixed (Chu et al., 2017; Hill et al., 2015).

Limitations and conclusions

Notable limitations of this study include its cross-sectional nature, the use of a non-random sampling method (i.e., convenience sampling), and reliance on self-reports. In addition, samples for both studies consisted of non-clinical young adults. For this reason, the generalizability of the findings is limited, and causal conclusions cannot be drawn. Importantly, given that the IMV model is inherently temporal and process-oriented, the cross-sectional design also does not enable conclusions regarding the temporal sequencing among its components (e.g., from defeat to entrapment to suicidal ideation). Therefore, the present findings should be interpreted as reflecting associations consistent with the IMV framework rather than evidence supporting its temporal processes. One additional limitation concerns the use of a forced-response format in the online survey. Although this approach was intended to minimize missing data, it may have affected response quality or participant comfort, particularly given the sensitive nature of some items, and should be considered when interpreting the findings. Moreover, the outcome variable of the present study was suicidal ideation, allowing for testing only certain assumptions belonging to the motivational aspect of the IMV model of suicidal behavior. Therefore, further studies might consider utilizing random sampling methods, experimental/longitudinal designs, and investigating the associations among other phases (e.g., pre-motivational or volitional) of the IMV model. Additionally, prospective studies can delve into how the IMV model of suicidal behavior fits into other developmental periods apart from young adulthood, as suicide is a major public health problem across all ages (WHO, 2024).

Together, these findings underscore the importance of targeting PB and TB in therapy to disrupt the defeat–entrapment–suicidal ideation pathway (Sandford et al., 2022). Although cognitive bias modification and psychoeducation appear promising for PB, TB may be more resistant to change (Allan et al., 2018), highlighting the need for broader intervention strategies. Given that PB can intensify disconnection even in supportive contexts (Joiner, 2005), interventions that enhance social connectedness, affirm personal worth, and reduce burdensomeness may help counter the negative spiral leading to suicidal ideation. Importantly, the present findings highlight the protective role of PSS, which attenuated the association between entrapment and suicidal ideation. This underscores the importance of identifying perceived social support as a potential intervention target, particularly under conditions of increased defeat and entrapment.

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Author contributions B.D.: Conceptualization, Methodology, Data Collection, Formal analysis, Investigation, Writing – Original Draft. H.B.: Methodology, Data Collection, Writing – Review & Editing.

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Data availability The datasets and/or code generated during the current study are available from the corresponding author on request.

Declarations

Ethics approval All procedures performed in this study were conducted in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki Declaration and its later amendments. The study was conducted in accordance with institutional and national research ethics standards. Ethical approval was obtained from the Zonguldak Bülent Ecevit University Ethics Committee (Approval Number: 653790).

Consent to participate Informed consent was obtained from all individual participants included in the study.

Competing Interests The author(s) declare no competing interests.

Authors' Note The findings of Study 1 of the current article, which focused on scale development, will be presented as an oral summary paper at the 27th International Congress on Psychological Counseling and Guidance on June 12, 2026.

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