

Research Paper



Causal Relationships Between Emotional Intelligence and Suicidal Ideation in Adolescents: Evaluating the Mediating Role of Finding Meaning in Life and Perceived Social Support

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ABSTRACT

Objective: The present study was conducted to explain the causal relationship between emotional intelligence (EI) and suicidal ideation (SI) in adolescents living in state welfare organizations (SWO) with the mediating role of finding meaning in life and perceived social support (PSS).

Methods: The sample included 320 adolescents living in Tehran's SWO, selected by multistage cluster sampling and participating in the research. The current research was descriptive and correlational (using structural equation modeling [SEM]). The data were collected using the EIscale, the meaning in life questionnaire (MLQ), and the multidimensional scale of perceived social support (MSPSS) and were analyzed using SPSS software, version 22 and Amos software, version 24.

Results: The results showed that the model fits the collected data ($\chi^2/df=2.37$, comparative fit index [CFI]=0.957, goodness fit index [GFI]=0.920, adjusted GFI [AGFI]=0.881, and root mean square error of approximation [RMSEA]=0.066). Direct path coefficient (PC) between EI ($\beta=0.177$, $P>0.01$), finding meaning in life ($\beta=0.311$, $P>0.01$), and PSS ($\beta=0.427$, $P>0.01$) with SI was negative and significant. The indirect PC between EI ($\beta=-0.101$, $P=0.001$) and finding meaning in life ($\beta=0.111$, $P=0.001$) with SI was negative and significant.

Conclusion: The structural model of the research was the same in terms of fit with the data of two groups of girls and boys. Adolescents living in SWO are more vulnerable to suicide due to their unique experiences. Finding meaning in life, higher EI and social connections can reduce SI in adolescents and act as protective factors.

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Highlights

- Adolescents living in state welfare organizations (SWO) are more vulnerable to suicide due to their unique experiences.
- It was concluded that emotional intelligence (EI) has a negative and significant relationship with suicidal ideation (SI) in adolescents living in SWO.
- It was concluded that finding meaning in life has a negative and significant relationship with suicidal thoughts in adolescents living in SWO.
- It was concluded that perceived social support has a negative and significant relationship with suicidal thoughts in adolescents living in SWO.
- The results showed that the perceived social support mediates the relationship between EI and Suicidal thoughts in adolescents living in Tehran's SWO. Teacher support and family support mediate the relationship between EI and suicidal thoughts. Regardless of gender and age, family support moderates the relationship between EI and suicidal thoughts, and EI helps to reduce suicidal thoughts only if there is medium or high family support.
- The results showed that the perceived social support mediates the relationship between finding meaning in life and suicidal thoughts in adolescents living in Tehran's SWO.

Plain Language Summary

Adolescents are one of the crucial social groups that experience many difficulties and damages due to the current social characteristics and the characteristics of adolescence. The way of life and habits of adolescence sometimes lasts until the end of life, and therefore, the problems caused by it affect a lifetime rather than returning to a period. Knowing the social factors affecting the health of adolescents helps understand adolescents in the context of society. Based on what has been said, the current research aims to answer this question: Is the causal relationship between EI and suicidal thoughts in adolescents living in SWO mediated by finding meaning in life and perceived social support?

Introduction

Adolescence is a stage of human life that carries the most significant risk (Armitage et al., 2020). In any society, adolescents form a significant part of the population. More than 14% of Iran's population are adolescents (United Nations, 2015). During this period, extensive changes occur in various physical, cognitive, emotional, and social fields. These changes can cause constructive growth in the individual, and on the other hand, may be associated with tension and confusion (Savva et al., 2013). Adolescence is one of the most vital and stressful times in every person's life (Yadollahi et al., 2020). Considering that today's children and teenagers form the foundation of the future society, neglecting them will lead to irreparable results. Also, in societies that pay less attention to this group, more social problems exist (Nader Pilehroud et al., 2021)

It can be said that suicide is an aggressive action that is caused by failure. In other words, suicide is the final result of aggression against oneself from within (U.S. Department of Justice, 1954). Suicide means harming oneself to destroy oneself (Becker et al., 2018; Mikaeili & Samadifard, 2019). Suicide attempts include the execution of a method or a plan to end life, which can lead to complete or failed suicide (Berardelli et al., 2019). SI is defined as self-reported thoughts about suicide, ranging from a vague desire to die to a complete suicidal plan (Anderson, 2002). Suicidal ideation (SI), intentions, or plans are the vital risk factor in suicide. SI means imagining, thinking, rumination, and mental preoccupation about death or self-harm (Liang et al., 2020). The more intense and persistent the SI, the more serious the risk of suicide (Olfson et al., 2021).

Emotional intelligence (EI) is described as a person's ability to manage emotions along with the optimal performance of cognitive processes to motivate a person to

achieve far and near goals (Fabio et al., 2013). Experts who believe in EI argue that mental intelligence is insufficient to form a person's personality and existence. To get a complete picture of a person's ability to make appropriate decisions, the effective use of interpersonal skills to communicate and understand others, the tools of self-existence suitably and proportionately, and finally, efficient and appropriate management of stress, EI is required (Mendelson & Stabile, 2019).

Another predictor of SI is finding meaning in life, which is highlighted during adolescence and the emergence of adulthood (Steger, 2006). There is a purpose and a meaning in life, and this purpose is such that it gives meaning to even the most difficult moments of life. Death, suffering, disease, and natural disasters become bearable by finding meaning in life. Frankl (2010) emphasizes people's search for meaning in life and believes that if people cannot find meaning, they feel empty and disappointed in life, and boredom and fatigue cover their whole being. Perceived social support (PSS) is among other factors related to SI in adolescents. It is defined as a person's realization that others care about his/her beliefs and feelings and consider him/her as a valuable person (Mohamed Baqutayan et al., 2020).

Understanding PSS is more crucial than receiving it. In other words, a person's understanding and attitude towards the received support is more important than the amount of support provided to him (Abdolazimi & Niknam, 2018). Also, in the classification of dimensions and people related to PSS, it is stated that PSS includes the help and perceived social support of family (PSS-Fa), friends (PSS-Fr), and other crucial people in life, which a person understands according to his/her social and personal conditions (Sadri Damirchi et al., 2020).

Based on what has been said, the current research aims to answer this question: Is the causal relationship between EI and SI in adolescents living in state welfare organizations (SWO) mediated by finding meaning in life and PSS?

Materials and Methods

The current research is applied, and the research method is a descriptive-correlational design. The research design is the structural equation modeling (SEM). The statistical population included all the boys and girls living in day and night care centers for Tehran's SWO in 2023. Due to the large size of the statistical population and the impossibility of accessing and obtaining permission to enter all quasi-family centers (juvenile detention centers), a multistage random sampling method was used.

Inclusion and exclusion criteria

The inclusion criteria included those who were 15 to 18 years old, were not unsupervised or poorly supervised, and lived in SWO centers.

The exclusion criteria included suffering from mental illnesses and receiving drug therapy and psychotherapy interventions.

Procedures

Ask suicide-screening questions (ASQ)

Olson (1984) designed the ask suicide-screening question (ASQ), which is a 15-item self-report suicide risk-screening measure. Its primary purpose is to evaluate the tendency or probability of suicide in adolescents. Each question has two options. The yes option gets a score of one, and the no option gets a score of zero. Of course, this scoring method will be reversed for questions 1, 5, and 11. In adolescents with a strong desire to commit suicide, the answers will be as follows: 1. no, 2. yes, 3. yes, 4. yes, 5. no, 6. yes, 7. yes, 8. yes, 9. yes, 10. yes, 11. no, 12. yes, and 13. yes

Noori found the validity of the questionnaire to be 0.65. Also, the reliability of the ASQ in adolescents was calculated using Cronbach's α method, which is equal to 0.69, indicating this questionnaire's acceptable reliability (Gatezadeh & Zhmadi, 2019).

Wong and Law (2002) emotional intelligence scale (WLEIS)

Wong and Law (2002) designed and compiled the EI scale (to measure EI from the point of view of Mayer and Salovey (1993)). In addition to international support, this scale is easy to administer because it has a small number of items. Specifically, it includes 16 items of the 7-point Likert type (1=strongly disagree to 7=strongly agree), which are divided into four dimensions: appraisal and expression of emotion in the self (self-emotional appraisal [SEA]), appraisal and recognition of emotion in others (others' emotional appraisal [OEA]), regulation of emotion in the self (regulation of emotion [ROE]), and use of emotion to facilitate performance (use of emotion [UOE]). Examples for each dimension are SEA ("I have a good sense of why I feel certain feelings most of the time"), OEA ("I am a good observer of others' emotions"), UOE ("I always set goals for myself and then try my best to achieve them"), and ROE ("I can always calm down quickly when I am furious."). Heydari

(2020) evaluated the content validity, formal validity, and criteria of the Wong and Law (2002) emotional intelligence scale (WLEIS) and estimated the Cronbach's α coefficient >0.7 .

The meaning in life questionnaire (MLQ)

Steger et al. (2006) created the MLQ. It has ten items, which include two subscales, the presence of meaning and the search for meaning. They consist of five items each. The presence of the meaning subscale measures how fully respondents feel their lives are meaningful. The subscale of the presence of meaning includes these items: I understand the meaning of my life, I have found a satisfying purpose for my life, my life has a clear purpose, I am looking for something that makes my life meaningful, I am looking for a purpose and ideal for my life. The search for meaning subscale measures respondents' engagement and motivation find meaning or deepen their understanding of meaning in their lives. The search for meaning subscale includes the following items: Items in my life, I have a clear purpose, I have a good feeling that something gives meaning to my life, I have always been looking for a purpose for my life, I have always been looking for something that gives meaning to my feeling of life, I am looking to find a purpose for my life. The MLQ assesses two dimensions of meaning in life using ten items rated on a seven-point scale from "absolutely true" to "absolutely untrue." The total scores of questions 2, 3, 7, 8, and 10 determine the level of a person's effort to find meaning, and the total scores of questions 1, 4, 5, 6, and 9 (question 9 with reverse coding) determine the level of meaningfulness of a person's life. The MLQ has good reliability, test-retest stability, stable factor structure, and convergence among informants. According to Steger et al. (2006), internal consistency was good for both the presence (0.86) and search (0.87) subscales. Also, the reliability was good for both the presence (0.7) and search (0.73) subscales. The test and retest reliability of MLQ in Iran was 0.84 for the presence subscale and 0.74 for the search subscale.

Multidimensional scale of PSS (MSPSS) (Zimet et al., 1988)

The MSPSS is a 12-item instrument and measures PSS from three sources: family, community, and friends, on a seven-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). The minimum and maximum scores of the individual on the whole scale are 12 and 84, respectively, and in each of the family, social, and friend support subscales, 4 and 28, respectively. A higher score indicates greater PSS. The psychometric properties of

the MSPSS have been confirmed in worldwide research. In a preliminary study, the psychometric properties of this scale in 742 Iranian students and population, 311 students and 431 general, were considered. Cronbach's α coefficients were calculated for the whole scale and the items of the three subscales of family (PSS-Fa), friends (PSS-Fr), and other crucial people in life, were 0.91, 0.87, 0.83, and 0.89. These coefficients confirmed the internal consistency of the multidimensional scale of PSS (Besharat, 2019).

Results

In the present study, 320 adolescents living in Tehran's SWO (155 girls and 165 boys) participated with the Mean \pm SD of the age group for girls and boys equal to 15.70 and 1.35 years, respectively. Table 1 presents the Mean \pm SD, and correlation coefficients between EI (SEA, OEA, ROE, and UOE), finding meaning in life, PSS (PSS-Fa, PSS-Fr and PSS-others), and SI variables. As shown in Table 1, the correlation between the variables was in the expected direction and aligned with the theories of the research field.

Univariate normal distribution

In this research, to evaluate the assumption of a univariate normal distribution, kurtosis, and skewness of the variables and to evaluate the assumption of collinearity of values, the variance inflation factor (VIF) and tolerance coefficient were investigated (Table 2).

As shown in Table 2, the Kurtosis and Skewness values of all components are in the range of ± 2 . This indicates that the assumption of univariate normal distribution among the data is valid (Kline, 2023). Also, as shown in Table 2, the assumption of collinearity was valid among the current research data because the tolerance coefficient values of predictor variables were >0.1 , and the VIF values of each of them were <10 . According to Myers et al., (2016) the tolerance coefficient <0.1 and the value of the VIF is >10 , indicating that the assumption of collinearity is not established.

Multivariate normal distribution (MND)

In this research, to evaluate the establishment or non-establishment of the assumption of MND, the information analysis related to "the Mahalanobis distance" was used. The values of skewness and kurtosis were 1.34 and 2.33, respectively. Therefore, the value of each index was in the range of ± 2 , which rejects the assumption of MND among the data. For this reason, a box plot

Table 1. The Mean±SD and correlation coefficients between research variables

Research Variables	1	2	3	4	5	6	7	8	9	10
1. EI-SEA	-									
2. EI-OEA	-0.71**	-								
3. EI-UOE	0.65**	-0.65**	-							
4. EI-ROE	0.45**	0.42**	-0.57**	-						
5. Finding meaning in life-the presence	0.27**	0.33**	0.46**	-0.43**	-					
6. Finding meaning in life-the search	0.23**	0.24**	0.41**	0.29**	-0.48**	-				
7. PSS-Fa	0.22**	0.29**	0.4**	0.25**	0.32**	-0.71**	-			
8. PSS-Fr	0.30**	0.39**	0.46**	0.34**	0.66**	0.45**	-0.35**	-		
9. PSS-others	0.32**	0.33**	0.48**	0.45**	0.75**	0.53**	0.39**	-0.71**	-	
10. SI	-0.35**	-0.36**	-0.54**	-0.36**	-0.63**	-0.61**	-0.48**	-0.56**	-0.62**	-
Mean±SD	11.81±3.19	11.92±3.55	11.01±3.72	10.09±3.05	16.26±4.39	19.35±5.65	10.9±3.68	11.55±3.79	10.63±3.4	7.67±2.17

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Abbreviations: EI: Emotional intelligence; SI: Suicidal ideation; SEA: Self-emotional appraisal; OEA: Others' emotional appraisal; ROE: Regulation of emotion; UOE: Use of emotion; PSS-Fa: Perceived social support-family; PSS-Fr: Perceived social support-friends.

*P<0/05, **P<0/01.

Table 2. Examining the assumptions of normality and collinearity

Research Variables	Univariate Normality		Collinearity of Values	
	Skewness	Kurtosis	Tolerance Coefficient	VIF
1. EI-SEA	-0.06	-1.33	0.43	2.32
2. EI-OEA	-0.02	-0.97	0.39	2.54
3. EI-UOE	0.27	-0.83	0.36	2.75
4. EI-ROE	0.5	-0.91	0.61	1.64
5. Finding meaning in life-the presence	0.59	-0.03	0.41	2.46
6. Finding meaning in life-the search	0.46	-0.66	0.47	2.14
7. PSS-Fa	0.23	-1.13	0.39	2.6
8. PSS-Fr	-0.07	-0.63	0.42	2.36
9. PSS-others	-0.39	-0.9	0.39	3.09
10. SI	0.46	-0.59	-	-

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Abbreviations: EI: Emotional intelligence; SI: Suicidal ideation; SEA: self-Emotional appraisal; OEA: Others' emotional appraisal; ROE: Regulation of emotion; UOE: Use of emotion; PSS-Fa: Perceived social support-family; PSS-Fr: Perceived social support-friends.

was drawn for “the Mahalanobis distance” scores and found that the data for the three participants constituted multivariate outliers. For this reason, the data for those three participants were removed from the data. With this action, the skewness and kurtosis values of “the Mahalanobis distance” data were reduced to 1.05 and 0.81. In this way, after removing the multivariate outliers, the

assumption of MND was established among the data. Finally, to evaluate the homogeneity of variances, the scatter diagram of the standardized residuals of the errors was examined, and the evaluations showed that the assumption was also valid among the data.

Table 3. Fit indices of the research model

Fitness Indicators	Model				Cutting Points
	Measuring		Structural		
	Initial	Modified	Initial	Modified	
Chi-square	91.39	60.17	120.08	71.64	-
Degrees of freedom (df)	24	23	30	29	-
Normed chi-square (χ^2/df)	3.81	2.62	4	2.47	<3
Goodness fit index (GFI)	0.936	0.958	0.929	0.955	<0.9
Adjusted goodness fit index (AGFI)	0.88	0.918	0.87	0.915	<0.85
Comparative fit index (CFI)	0.958	0.977	0.952	0.977	<0.9
RMSEA	0.094	0.071	0.097	0.068	>0.08

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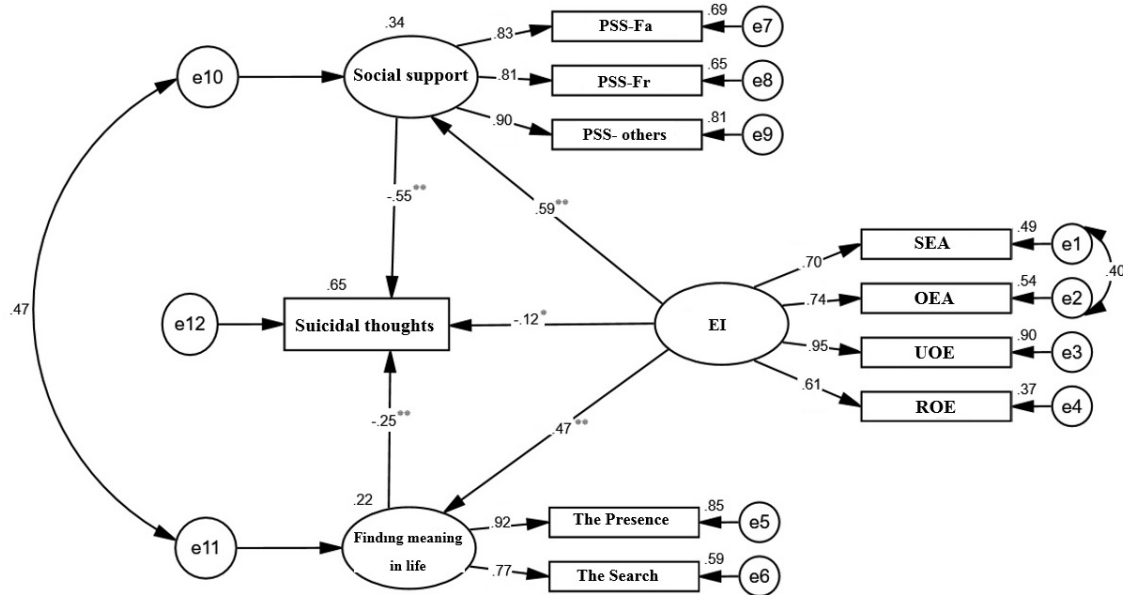


Figure 1. Standard parameters of the modified research model

Model analysis

Model specification

In the research measurement model, nine indicators reflected three existing structures. According to Figure 1, it was assumed that the indicators of SEA, OEA, UOE, and ROE are the latent variables of EI. The indicators of the presence of meaning and the search for meaning are the latent variables of finding meaning in life. Also, the indicators of PSS-Fa, PSS-Fr, and PSS-others measure the latent variable of PSS. The measurement model fit was assessed using confirmatory factor analysis (CFA), AMOS software, version 24.0, and maximum likelihood estimation. Table 3 presents the fit indices of measure-

ment and structural models, as well as the initial model of the modified model.

Table 3 shows that the root mean square error of approximation (RMSEA) fit index obtained from the CFA does not support the acceptable fit of the measurement model with the collected data. Considering the importance of that index in fitting the model with the data, the evaluation indices are modified, and based on that, by creating covariance between the two indicators of SEA and OEA, and modifying the measurement model, the acceptable fit indices for the measurement model were obtained. In the measurement model, the highest factor loading belonged to the presence of the meaning indicator ($\beta=0.943$), and the most minor factor load belonged

Table 4. The PC of direct effects, indirect effects, and total effects between research variables

Path	b	SE	β	P
EI ---> PSS	0.601	0.069	0.585	0.001
EI ---> The finding meaning	0.952	0.14	0.47	0.001
PSS ---> SI	-0.57	0.074	-0.55	0.001
The finding meaning ---> SI	-0.131	0.033	-0.249	0.001
Direct PC of EI ---> SI	-0.128	0.06	-0.12	0.026
Indirect PC of EI ---> SI	-0.468	0.06	-0.439	0.001
Total PC of EI ---> SI	-0.596	0.067	-0.56	0.001

Abbreviations: EI: Emotional intelligence; SI: Suicidal ideation; PSS: Perceived social support.

to ROE ($\beta=0.617$). Thus, considering that the factor loadings of all indicators were more significant than 0.32, it can be said that all of them had the necessary power to measure the current research variables.

Structural model

Following the evaluation of the measurement model fit, in the second stage, the fit indices of SEM were estimated and evaluated. The SEM assumed that EI is related to SI in adolescents living in Tehran's SWO directly and through the mediation of finding meaning in life and PSS. Table 3 shows that the two fit indices RMSEA and χ^2/df obtained from the analysis do not support the acceptable fit of the primary SEM with the collected data. Table 3 shows that the fit indices obtained from the analysis support the range of acceptable values of SEM with the collected data. Table 4 shows the path coefficients (PCs) in the SEM.

Table 4 shows that the PC between EI ($P=0.001$, $\beta=0.56$) on the one hand and the PC between finding meaning in life ($P=0.001$, $\beta=0.249$) and PSS ($P=0.001$, $\beta=0.55$) on the other hand is negative and significant with SI. Table 4 shows that the indirect PC between EI and SI ($P=0.001$, $\beta=0.439$) is negative and significant. However, as seen in Figure 1, two mediators were observed in the research model (finding meaning in life and PSS). For this reason, Baron and Kenny's (1986) formula was used to determine the significance or non-significance of the mediator role of each of the two mediator variables. Using Baron and Kenny's formula showed that the indirect PC between EI and SI through finding meaning in life ($\beta=-0.118$, $P=0.001$) and PSS ($P=0.001$, $\beta=-0.325$) is negative and significant. This result shows that PSS and finding meaning in life mediate the relationship between EI and SI in a hostile and significant way in adolescents living in Tehran's SWO. Figure 1 shows the standard parameters in the research SEM.

Figure 1 shows the standard parameters in the research model. As shown, the sum of squared multiple correlation (R^2) for SI was equal to 0.65. This shows that the SI factors of finding meaning in life, EI, and PSS explain 65% of the variance of SI in adolescents living in Tehran's SWO.

Discussion

First hypothesis: EI is related to SI in adolescents living in Tehran's SWO.

The results showed negative and significant PC between EI and SI. Therefore, in the first hypothesis test, it was concluded that EI has a negative and significant relationship with SI in adolescents living in SWO. These results are consistent with the results of other researchers (Zhao et al., 2022; Mohamed & Ahmed, 2022; Quintana-Orts et al., 2022; Extremera et al., 2020; Kopra et al., 2021; Ganaprakasam, 2018; Domínguez-García and Fernández-Berrocal, 2018; Mohammadi Gondreh and Rashidi, 2017).

The results of Zhao et al. (2023) support the significant relationship and negative correlation between EI and SI. Their research showed that a person's ability to manage his emotions strongly relates to SI. In addition, emotional cognition and other emotional management skills predict SI. Mohamed and Ahmed (2022) consider low EI as one of the reasons for increasing SI in depressed patients. The results of Quintana-Orts et al. (2022) confirmed the positive and significant relationship between EI and adaptive cognitive emotion regulation (ACER) strategies and the negative relationship with SI among adolescents. Those adolescents with higher EI were more likely to report more ACER strategies, which in turn predicted lower levels of SI. Extremera et al. (2011) showed that ACER strategies mediate the relationship between EI and well-being, and the use of maladaptive emotion regulation strategies and poor ability to regulate emotions increases the risk of SI. Poor EI and difficulty in regulating mood are related to the increased risk of SI and suicidal behavior in people dependent on alcohol consumption, and emotional dysregulation predicts a higher prevalence of SI (Kopra et al., 2021). A significant relationship is observed between EI and SI and the mental health of 15-17-year-old adolescents (Ganaprakasam, 2018) and a high level of EI plays a crucial role in protecting against SI and suicidal behaviors (Domínguez-García & Fernández-Berrocal, 2018). Mohammadi Gondreh and Rashidi (2017) showed that compared to regular students, students with SI have lower EI and resilience and use more ineffective coping styles.

EI, defined as a set of hierarchically organized emotional skills for perceiving, using, understanding, and regulating emotions, plays a crucial role in preventing suicidal behavior/thoughts during adolescence. One of the crucial aspects that usually triggers emotions and SI is the difficulty in expressing and regulating emotions (Bennett et al., 2021). According to psychological theories, SI and suicidal behavior result from the inability to moderate and tolerate negative experiences and experience unpleasant emotions. From this point of view, committing suicide may be an attempt to escape from these

experiences. Those with better skills in managing their emotions may be less exposed to SI and risk in response to stress (Mohamed & Ahmed, 2022).

According to the researchers, the relationship between EI and the development and use of effective cognitive, emotional, and behavioral strategies to help people cope with stress and adverse events, leads to higher mental health and well-being and lower levels of SI and suicide (Quintana-Orts et al., 2022). Research shows that EI can affect mental health by improving the ability to manage life's stresses. Those with higher EI may use more effective coping strategies that lead to reduced SI and, as a result, improved mental health (Extremera et al., 2020).

Low EI is directly related to poor problem-solving skills, SI, and actions (Borges et al., 2012). Also, high levels of rumination due to low EI may increase SI in adolescents. Adolescents who score lower on EI tests are more likely to struggle with low self-esteem and SI (Zhao et al., 2022). People with higher EI are likely to show better interpersonal skills and receive more psychological and PSS from others due to their high ability to understand their own and others' emotions. EI helps people understand their emotions better. This level of self-awareness can help identify early signs of depression and anxiety, such as feelings of hopelessness and emptiness, feelings of loneliness and isolation, and feelings of lack of control over existing conditions, and reduce high-risk behaviors, such as suicide. From this point of view, EI is considered an efficient tool to prevent SI and helps people to better cope with life's challenges.

Complex interactions between different brain regions and neurotransmitters significantly influence EI and suicide risk. The prefrontal cortex plays a crucial role in performing various tasks, such as emotion regulation, planning, problem-solving, decision-making, personality regulation, working memory, and impulse control. The prefrontal cortex is involved in inhibiting harmful behaviors, such as the inability to inhibit suicidal tendencies. Therefore, the immature functioning of the growing and developing brain in the prefrontal cortex and reduced activity in this area may lead adolescents to engage in risky activities, such as suicide, violence, and drug addiction (Kwan et al., 2020). Specific brain areas and neurotransmitters influence EI and suicidality. Abnormal activity in the amygdala, which plays a role in processing emotions and emotional reactions, can lead to problems in EI and increase the risk of suicide. The hippocampus is another area that plays a role in learning and memory and helps regulate emotions. According to research, changes in the size and function of the hippo-

campus may be associated with emotional problems and the risk of suicide (Borges et al., 2012). Also, disorders in the dopaminergic system can affect EI and suicidal behaviors. Decreased serotonin levels are also associated with depression and increased risk of suicide. Changes in the level of norepinephrine, which is involved in the stress response, can affect mood and emotional behaviors. Disturbances in the dopaminergic system can affect EI and suicidal behaviors (Quintana-Orts et al., 2022).

In this framework, SI results from the inability to analyze and adjust unpleasant and uncomfortable emotional states rooted in low EI. In the structure of EI, mood regulation plays a crucial role in reducing internal distress. Mood regulation is part of a complex emotional executive system, including managing current emotional distress and predicting the emotional outcome based on past experiences. Therefore, high EI and skill in managing emotions and experiencing positive emotions can reduce SI. Also, good mood regulation skills probably increase the ability to experience and benefit from positive emotions. This not only reduces negative emotions but also improves social interactions and potentially reduces the impact of interpersonal issues on suicidal tendencies.

The second hypothesis: Finding meaning in life is related to SI in adolescents living in Tehran's SWO.

The results showed that negative and significant PC between finding meaning in life and SI. Therefore, in the second hypothesis test, it was concluded that finding meaning in life has a negative and significant relationship with SI in adolescents living in SWO. These results are consistent with the results of other researchers (Yazdani et al., 2024; Guo et al., 2023; Sun et al., 2023; Marco et al., 2024; Gravier et al., 2020; Liu et al., 2021; Costanza et al., 2019; Tan et al., 2018; Yarian & Ameri, 2019; Sadri Damirchi et al., 2020; Borji et al., 2019).

Yazdani et al. (2024) showed that low levels of finding meaning in life, hope, and PSS have a negative and significant relationship with SI and increase the probability of using psychiatric drugs to attempt suicide in nursing students. According to Guo et al. (2023), finding meaning in life and positive and negative emotions show distinct and complex links with the three dimensions of SI (pessimism, sleep, and despair). Finding meaning in life and positive affect act as a protective shield against SI. The results of Sun et al. (2023) showed that although finding meaning in life does not have a direct and significant relationship with SI, finding meaning in life through depression has the most substantial relationship with SI. Finding meaning in life moderates the relation-

ship between SI, hopelessness, and borderline symptoms in individuals with eating disorders (Marco et al., 2024). The meaning in life can decrease SI by increasing positive emotions (Gravier et al., 2020). Liu et al. (2021) showed that finding meaning in life has a significant and negative relationship with SI and suicidal behavior in students. In a systematic review, Costanza et al. (2019) found that finding meaning in life protects against SI and suicidal behavior. Tan et al. (2018) also found that finding meaning in life partially mediates the relationship between mental health status and the severity of SI. Specifically, students who experience poorer mental health status may be more likely to report having a poorer sense of meaning in life, which in turn increases SI. Yarian and Ameri, (2020) showed a negative and significant relationship between finding meaning in life and SI in the elderly. The presence of meaning in life by reducing the initially incompatible schemas leads to increased SI in students. Therefore, finding meaning in life is a protective factor against the risk of suicide in students (Borji et al., 2019). Sadri Damirchi et al. (2020) also showed that finding meaning in life and coping strategies can explain and predict SI in the elderly.

Finding meaning in life includes one's values, experiences, goals, and beliefs, and has an inverse relationship with depression, hopelessness, and SI (Sun et al., 2022). Finding meaning in life is a factor in increasing resilience and muscular flexibility (Costanza et al., 2019). People who feel confused about the meaning of life are prone to despair and SI. Individuals with SI in the past 12 months were more likely to attempt suicide in the next 12 months (Guo et al., 2023). Among the two dimensions of finding meaning in life, the search for meaning and the presence of meaning in life, the presence of meaning in life may be the main and key factor in preventing suicide, while the search for the meaning of life may predict SI (Liu et al., 2020). Having meaningful moments in life can reduce hopelessness. Thus, meaning in life may act as a barrier against various factors that fuel SI, such as bullying victimization, psychological stress, hopelessness, and loss of sense of belonging.

Guo et al. (2023) indicated the presence of a complex interaction between emotion, finding meaning in life, and SI. Their results showed that negative affect is related to despair, low sleep quality, and dimensions of pessimism in SI. Consistent with Guo et al. (2022), it can be concluded that this close relationship between finding meaning in life and emotions shows that emotions can indirectly affect SI and emphasizes their importance as common factors influencing SI. The meaning in life by helping to strengthen and improve hope improves men-

tal well-being and reduces the feeling of hopelessness. As Yazdani et al. (2024) showed, ideals and values can give meaning to a difficult life and increase the sense of duty and responsibility. Finding meaning in life can help people choose a set of appropriate goals, experience a sense of agency, and accept themselves. Even in the face of failure, such a person can probably consider more suitable paths and move forward with more hope (Cetin et al., 2024). The destructive effect of a sense of meaninglessness can leave people feeling what Frankel called an existential vacuum or existential frustration. The long-term experience of meaninglessness, characterized by boredom and apathy, may increase the tendency toward suicidal behavior (Cetin et al., 2024).

Finding meaning in the lives of adolescents living in SWO can greatly impact their mental health. Therefore, without this meaning, the possibility of SI increases. The absence of meaning in the lives of those who feel less belonging to others, maybe a factor for the occurrence of SI and even suicide attempts, combined with frequent traumatic experiences, the experience of feeling aimless, lonely, and isolated, and lack of hope for the future, and feelings of worthlessness. The absence of meaning in the lives of those who feel less belonging to others, if combined with frequent traumatic experiences, the experience of aimlessness, loneliness, isolation, lack of hope for the future, and feelings of worthlessness, may be a factor for the emergence of SI and even actions to commit suicide. Therefore, providing opportunities to create meaning and purpose in the lives of this group of adolescents can help reduce the risk of SI and improve their mental health.

The third hypothesis: PSS is related to SI in adolescents living in Tehran's SWO.

The results showed that the PC between PSS and SI is negative and significant. Therefore, in the third hypothesis test, it was concluded that PSS has a negative and significant relationship with SI in adolescents living in SWO. These results are consistent with the results of other researchers (Hussein & Yousef, 2024; Hofmeier et al., 2017; Huang et al., 2024; Du et al., 2021; Zhao et al., 2022; Arab et al., 2024; Maleki et al., 2022).

Poor PSS predicts the severity of SI in students (Hussein & Yousef, 2024). Hofmeier et al. (2017) showed that PSS provides more excellent protection against SI for people with lower levels of mental health symptoms. Huang et al. (2024) indicated that negative judgments can devalue healthcare trainees' work and thus create a psychological burden for them, which is associated with

emotional exhaustion, insomnia, and SI. By examining 818 studies, [Du et al. \(2021\)](#) supported the existence of a significant negative relationship between PSS and SI in cancer patients and the key role of PSS in preventing SI in them. [Zhao et al. \(2022\)](#) showed that PSS-FA and PSS-Fr, but not teachers, were inversely related to SI in rural Chinese children experiencing rejection by others. [Arab et al. \(2024\)](#) showed a significant negative relationship between PSS and SI in high school students. [Maleki et al. \(2022\)](#) also supported the existence of a significant negative correlation between the components of PSS and life satisfaction with SI in students.

About half of patients who attempt or die by suicide do not disclose SI ([Rainbow et al., 2023](#)). Thus, higher levels of psychological distress can lead to increased isolation and social withdrawal as a way to express distress. Reduced interaction with others can cause feelings of loneliness ([Hofmeier et al., 2024](#)). Consistent with these results, it seems that the risk of suicide is lower when a person has more social connections, and this emphasizes the importance of PSS. However, [Gill et al. \(2023\)](#) believed that people experiencing distress and SI may hesitate to seek help due to fear of not being understood by their loved ones. According to these results, for adolescents deprived of the possibility of receiving support from their family and siblings due to their living conditions, having a strong connection with a group can help increase the sense of belonging in people and promote the feeling of personal worth. Also, efficient social relations provide access to wider sources of PSS. In such an environment, people can monitor each other's behavior and positively affect each other's psychological well-being.

Those with lifetime SI reported significantly less support from their family and felt more dissatisfied with this level of support ([Hussein & Yousef, 2024](#)). Being able to share thoughts and knowing someone is available when needed seems to reduce people's feelings of loneliness. Talking about SI and the reactions and judgments of others can be difficult, daunting, and scary. Therefore people may fear others' evaluations of themselves. People around them may also think that asking more about SI will lead adolescents to commit suicide more. [Huang et al. \(2024\)](#) believed that asking people about SI helps to understand better what is happening and make a more informed decision. According to [Zhao et al. \(2022\)](#), talking about SI with a child or teenager does not lead to fostering suicidal ideas and does not increase the risk of committing suicide.

PSS increases resilience, which is considered a protective factor against SI and actions. [Scher \(2023\)](#) sug-

gested that promoting resilience may reduce suicide risk in the population, among those with SI, and in high-risk groups for suicide attempts. [McLean et al. \(2017\)](#) also believe that most adolescents have the necessary resilience to reduce SI. Although it is not definitively known which factors protect against the destructive effect of stress against the emergence of suicidal symptoms following a stressful event. Consistent with these results, it seems that a strong support system can help people use more mature coping and problem-solving strategies in stressful and critical situations, show more flexibility, cope with challenges and crises better, and finally show more resilience.

PSS can play a vital role in the mental health of adolescents who are deprived of living with their families due to living in daycare centers. PSS can also help them avoid SI. The presence of supportive people as an emotional source can help adolescents cope better with their emotional challenges and problems and manage their negative emotions better. PSS can help this group of adolescents build positive and stable relationships by strengthening their communication and social skills. PSS can help reduce stress and psychological pressure, which can lead to a reduction in SI.

Fourth hypothesis: PSS mediates the relationship between EI and SI in adolescents living in Tehran's SWO.

The results showed that the PSS mediates the relationship between EI and SI in adolescents living in Tehran's SWO. This result is consistent with others' research results ([Galindo-Domínguez & Pegalajar, 2020](#)) regarding the mediating role of perceived PSS in the relationship between EI and SI. Based on Galindo-Domínguez and Pegalajar, teacher and family support mediate the relationship between EI and SI. Regardless of gender and age, family support moderates the relationship between EI and SI, and EI helps reduce SI only if there is medium or high family support ([Galindo-Domínguez & Pegalajar, 2020](#)).

These researchers found that peer support and age moderate the relationship between EI and SI. In other words, peer support and age affect the relationship between EI and SI, especially for older adolescents. The results of the present study are also consistent with the results of studies that have confirmed the mediating role of PSS in the relationship between EI and the mental health of adolescents ([Shu et al., 2019](#); [Hayes et al., 2020](#); [Zhao et al., 2020](#); [Lopez-Zafra et al., 2019](#)). For example, [Hayes et al. \(2020\)](#) showed that perceived PSS is mediating between EI and mental health in undergraduate students.

Lopez-Zafra et al. (2019) have also shown that PSS and life satisfaction act as mediators in the relationship between EI and depression.

People with high EI traits usually have a more remarkable ability to communicate effectively with others. As a result, they can better understand their own and other people's feelings and establish stronger social relationships. High EI can help people build stronger support networks. People who can manage their emotions are perceived as more reliable friends and colleagues, which can lead to receiving more PSS. Also, people with high EI traits usually have more ability to manage conflicts. They can control negative emotions and solve problems, which helps maintain social relationships and mutual support. In this context, Galindo-Domínguez and Pegalajar, 2020 believe that EI in adolescents can help create better PSS to face personal challenges. EI includes the ability to empathize with others. People who can understand the emotions of others are usually more willing to provide PSS, which can help strengthen interpersonal relationships. Therefore, it seems that PSS can help people's mental health, and EI can also help people benefit from this support. In other words, people with high EI traits can better use their support resources, and as a result, they will have better mental health. Effective conflict management reduces stress and anxiety, and the ability to cope effectively with stress and problems also reduces adolescent depression. Therefore, as mental health increases, SI also decreases.

To understand the mediating role of PSS in the relationship between EI and SI in adolescents, one can pay attention to the research investigating the mediating effects of PSS in the relationship between EI and psychological well-being. Zhao et al. (2022) showed that resilience, PSS, and social behaviors mediate the relationship between EI and positive (joy, fun, energy) and negative (sadness, fear, anxiety) emotions. Similar results obtained by Shu et al. (2022) suggested that EI helps adolescents receive more PSS, which leads to increased resilience and better psychological well-being. Inflexibility in thinking, cognitive distortions, and negative attitudes are among the cognitive factors affecting SI (Moscardini et al., 2021). Therefore, it seems that by increasing EI and PSS, cognitive and psychological flexibility is improved, resulting in reduced SI risk. In this regard, Lopez-Zafra et al. (2019) showed that the development of emotional skills can help increase the perceived PSS and, in turn, reduce obstacles in help-seeking behavior in adolescents. This is because adolescents without PSS may avoid receiving help and PSS to deal with negative thoughts related to suicide. Therefore,

it seems that adolescents with higher EI develop better social skills; they are more likely to seek PSS, and by seeking help from others, their ability to cope increases. As a result, they are better able to deal with SI. In support of this explanation, one can refer to Nakamura et al. (2022) They showed that greater exposure to suicide and less PSS were associated with more negative help-seeking beliefs.

Adolescents who are better able to identify, assess, and manage their own and others' emotions may create richer social interactions thanks to active listening, empathy, respect, and mutual assistance. These conditions will be optimal for creating more positive and less negative effects, and for creating more satisfaction with life and their mental well-being (Hidalgo-Fuentes et al., 2024; Kong et al., 2019). Reducing anxiety and negative emotions, along with increased life satisfaction can reduce the risk of SI in adolescents. In explaining these results, a set of personal characteristics (efficacy, self-esteem, etc.), and social characteristics (PSS, social atmosphere, etc.), can help create a better talent for developing resilience to understand problems. As a result, these characteristics help adolescents perceive problems with optimism, leading to improved well-being and reduced negative effects of personal events (Galindo-Domínguez & Pegalajar, 2023). Therefore, EI can strengthen the social behavior of adolescents and lead to better social relationships and increased life satisfaction.

It seems that the interaction of EI and PSS is a vital factor in promoting resilience against suicide because the feeling of empathy strengthens components, such as care, love, and belonging, increasing self-esteem, increasing the sense of connection, and providing coping resources in challenging times in people. Also, increasing these protective factors can reduce SI and the risk of suicide.

Fifth hypothesis: PSS mediates the relationship between finding meaning in life and SI in adolescents living in Tehran's SWO.

The results showed that the PSS mediates the relationship between finding meaning in life and SI in adolescents living in Tehran's SWO. No study examined the mediating role of PSS in the relationship between finding meaning in life and SI. However, other studies (Onyekachi et al., 2024; Zhang et al., 2024; Cohen-Louck & Aviad-Wilchek, 2020; Kim et al., 2007) have examined the mediating role of finding meaning in life in the relationship between PSS and SI. Their results are consistent with the results of the present study, which found an interactive effect between PSS and finding meaning

in life in reducing SI. Onyekachi et al. (2024) found that the presence of meaning in life is a pathway through which PSS reduces depressive symptoms and suicidal behavioral tendencies. Zhang et al. (2024) showed the direct and indirect effects of PSS with the mediation of self-care/self-efficacy and finding meaning in life on facilitating the resilience of cancer patients with suicidal tendencies. Cohen-Louck and Aviad-Wilchek showed that family support acts as a resilience factor against suicide. Still, social activity and participation increase the finding of meaning in life and act as a possible resilience factor against suicidal tendencies (Cohen-Louck & Aviad-Wilchek, 2020). Kim et al. (2008) showed a positive relationship between feeling meaningless in life and SI; also, SI had a negative relationship with PSS, and finding meaning in life had a positive relationship with PSS. Other researchers have examined the relationships between PSS and finding meaning in life with constructs close to SI and depression. The results are consistent with the results of the present study. Zhu et al. (2022) found that PSS and finding meaning in life negatively predict hopelessness. Also, finding meaning in life plays a partial mediating role between PSS and hopelessness. According to Lee et al., (2020) depression has a significant negative correlation with PSS and finding meaning in life. Also, finding meaning in life mediates the relationship between PSS and depressive symptoms in college students.

Although no previous studies have directly examined the mediating role of PSS in the relationship between finding meaning in life and SI, evidence shows that without social connection, people lacking meaning in life develop SI (Chen et al., 2020). In particular, the “thriving through relationships” model proposes that PSS not only changes how people make inferences about stress but also can activate recipients’ participation in life, expand individual resources, and help people cope to cultivate purpose and meaning in life (Finney et al., 2015). Therefore, adolescents with a high sense of meaning usually do better when facing life problems and PSS can help them manage these problems better. Having a strong support network can help reduce stress and mental tension. PSS can help people strengthen their coping skills and cope better with life’s challenges and difficulties, which can help reduce SI.

Also, self-determination theory explains that satisfying the need for social relationships creates a sense of meaning for people. People with high PSS benefit from social roles and find identity and belonging (Haslam et al., 2015). Finding meaning in life and PSS strengthen people’s sense of worth and belonging to society (Litofsky et

al., 2004); the sense of belonging to the community also plays a supportive role against SI and attempts (Boyd et al., 2024). Therefore, with the increase in finding meaning in life, adolescents’ sense of belonging to society and social groups increases. This sense of belonging can lead to receiving more PSS because these individuals tend to connect with others and participate in social activities. When adolescents feel cared for and supported by others, they are more likely to find meaning in their lives and less likely to have SI because these adolescents have more purpose in life and adhere to the values and beliefs that guide their lives.

Conclusion

Adolescents living in SWO are more vulnerable to suicide due to their unique experiences. Finding meaning in life, as well as higher EI and social connections, can reduce SI in adolescents and act as protective factors. The results showed that emotional intelligence has a negative and significant relationship with suicidal thoughts in adolescents living in SWO, finding meaning in life has a negative and significant relationship with suicidal thoughts in adolescents living in SWO, and PSS has a negative and significant relationship with suicidal thoughts in adolescents living in SWO.

Ethical Considerations

Compliance with ethical guidelines

This study was approved by the Ethics Committee of Islamic Azad University, Tehran Central Branch (Code: IR.IAU.CTB.REC.1402.167).

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Authors' contributions

All authors equally contributed to preparing this article.

Conflict of interest

The authors declared no conflict of interest.

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