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Investigation of attachment social exclusion and risky behaviors in adolescents



Fahri Sezer^{1*} and Aytekin Gürtepe^{2†}

Abstract

The primary aim of this study was to investigate the relationships between attachment, social exclusion, and risky behaviors in adolescents. The sample comprised 463 adolescents, aged 13–18, attending various high schools in Turkey. Data were collected using three instruments: the Parent and Peer Attachment Inventory, the Ostracism (Social Exclusion) Scale for Adolescents, and the Risk Behaviors Scale. The results revealed a moderate negative correlation between attachment to mothers and risky behaviors, while a weaker negative correlation was observed between attachment to fathers and risky behaviors. Additionally, a low but statistically significant negative correlated with antisocial behaviors, suicidal tendencies, and school dropout, although the correlations were weak. In contrast, a weak but significant negative relationship was observed between social exclusion and eating habits. No significant association was identified between social exclusion and behaviors such as alcohol consumption or smoking.

Keywords Adolescent, Attachment, Social exclusion, Risky behaviors, Student

Introduction

Adolescence represents a pivotal stage in human development, marking the transition from childhood to adulthood. This period is characterized by significant biological, emotional, and psychological changes, and is particularly critical for identity formation, the establishment of social relationships, and emotional maturation [1]. During adolescence, gender differences become more pronounced, with the emergence and reinforcement of traditionally defined masculine and feminine roles, alongside the development of gender-specific emotional expressions and needs [2, 3]. Furthermore, when

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²National Education Directorate Fahrettin Aslan Middle School, İstanbul 34450, Turkey examined through the lens of Maslow's hierarchy of needs, adolescence is the stage at which individuals begin to experience social needs—such as belonging to a group, being accepted by peers, gaining social status, and receiving love and attention—with increasing intensity, in addition to striving to satisfy more basic physiological and safety needs [4].

During adolescence, the developmental changes experienced often lead young individuals to form strong social bonds with their peer groups. However, this increased reliance on peer relationships also heightens the risk of encountering adverse experiences such as rejection or social exclusion [5]. Social exclusion is commonly defined as the act of being ignored, rejected, or excluded by a social group [6, 7]. Attachment theory offers a valuable framework for understanding the psychological impact of such experiences [8]. According to this theory, adolescents' responses to social exclusion are influenced by the attachment models they internalized during early childhood [9].



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Studies examining the impact of early childhood attachment patterns on adolescence generally revolve around two primary perspectives. The first perspective posits that secure attachment plays a protective role in adolescents' psychosocial development. According to this view, individuals with secure attachment histories tend to exhibit higher levels of self-esteem, more advanced emotional regulation skills, and more adaptive behaviors in interpersonal relationships [10, 11]. Notably, early attachment experiences are emphasized as influential factors in adolescents' peer interactions and the formation of romantic relationships [12].

In contrast, the second perspective contends that attachment patterns are not fixed but rather subject to significant change during adolescence. This critical viewpoint highlights the dynamic nature of developmental processes, suggesting that evolving social interactions, novel experiences, and cognitive maturation throughout adolescence can reshape attachment styles. Empirical studies have demonstrated that adolescents' internal working models of attachment are malleable and may transform over time, influenced by peer relationships, social support systems, and individual interpretations [13]. Furthermore, this view asserts that attachment is a lifelong, fluid process that can be reorganized in response to environmental factors at various stages of development [14].

Previous research highlights that early attachment experiences are critical for shaping social and emotional adjustment during adolescence. Social exclusion, a major challenge in this period, involves marginalization from peer groups, communities, or social settings, significantly affecting adolescents' psychological, emotional, and social development [15, 16]. Its origins are multifactorial, arising from both individual traits and societal factors. Adolescents may experience exclusion due to poor social skills, physical differences, or nonconformity to social norms [17]. However, exclusion is not solely driven by personal characteristics; broader social structures and cultural expectations also play a role. Educational environments are key contexts where adolescents build identities and peer relationships. Here, exclusion often results from complex group dynamics, affecting not only individuals but also the wider social environment [18].

A growing body of research offers divergent views on the impact of social exclusion during adolescence and its link to attachment styles. Studies show that exclusion in this period can result in negative psychological outcomes, such as increased anxiety, depression, and low self-esteem [19, 20]. Rejection is believed to distort adolescents' self-perception, heightening their risk for longterm psychopathology [21]. Moreover, research suggests that individuals without secure attachment patterns are particularly vulnerable to the harmful effects of social exclusion [22].

Conversely, other studies suggest that adolescents may demonstrate resilience in the face of social exclusion and that such experiences can potentially transform attachment dynamics in adaptive ways [23, 24]. For instance, some adolescents may respond to exclusion by seeking out alternative sources of social support, thereby fostering new and stronger interpersonal bonds [25]. Moreover, a moderate degree of social exclusion has been proposed to enhance adolescents' sensitivity to social cues and contribute to the development of empathy [26, 27].

Building on these findings, social exclusion and attachment styles are key factors shaping adolescents' psychosocial development. It is crucial to examine whether social exclusion universally impacts all adolescents negatively, how attachment styles influence the perception of exclusion, and how individual differences mediate this relationship. Evidence shows that while social exclusion is associated with increased engagement in risky behaviors, attachment style moderates this link [10, 22]. Securely attached adolescents display greater resilience to exclusion and are less likely to engage in risky behaviors. In contrast, those with anxious or avoidant attachment styles are more vulnerable to its negative effects [24]. Social exclusion during adolescence also heightens feelings of loneliness, reduces self-esteem, and increases psychological distress [28]. Importantly, studies demonstrate that adolescents' responses to exclusion vary significantly depending on their attachment style [29, 30].

Risky behaviors refer to actions that adolescents voluntarily engage in, which have the potential to harm them and disrupt their social and psychological development [31]. These behaviors impede adolescents' ability to reach developmental milestones in a healthy manner, hinder the formation of a positive identity, and obstruct the attainment of social status [32]. Such behaviors encompass a range of actions, including alcohol consumption, eating disorders, antisocial behavior, smoking, school dropout, sexual behaviors, reckless driving, and suicidal tendencies [33–36]. Research indicates that adolescents who experience social exclusion tend to display varying levels of risky behaviors, with these behaviors influenced by their attachment styles.

Adolescents who experience social exclusion and exhibit insecure attachment styles demonstrate a heightened propensity for substance use [37, 38]. Furthermore, those subjected to social exclusion frequently exhibit low self-esteem and elevated depressive symptoms [26, 39]. Among individuals with anxious attachment styles, social exclusion exacerbates emotional distress and maladaptive coping mechanisms [40]. Notably, socially excluded adolescents with avoidant attachment styles are particularly susceptible to aggressive behaviors, diminished empathy, and hostile attitudes—outcomes linked to emotional detachment [41].

Consistent with existing evidence, adolescence represents the developmental stage during which individuals are most likely to engage in risky behaviors. These behaviors can impede healthy developmental progress and lead to serious long-term consequences. Often, they function as maladaptive coping mechanisms. Therefore, targeted interventions that address their underlying causes are essential for prevention. This study investigates the relationship between attachment styles, social exclusion, and risky behaviors in adolescents, while controlling for relevant covariates. To date, no study has examined these three variables together within a single framework. Accordingly, the study focuses on three primary research questions:

- 1. Is there a significant relationship between attachment styles and risky behaviors in adolescents?
- 2. Is there a significant relationship between social exclusion and risky behaviors in adolescents?
- 3. Do risky behaviors, attachment styles, and social exclusion differ based on gender?

Method

Research model

In this study, a relational survey model was employed to examine the relationship between risky behaviors in adolescents and attachment to mother, father, and peers, as well as social exclusion. The purpose of using this model is to determine the direction and strength of the relationships between the variables [42]. The research model is presented in Fig. 1.

Participants and procedures

This study involved 463 participants selected through a simple random sampling method from high school students attending secondary education institutions under the Ministry of National Education. The sample comprised 67.2% female students (n = 311) and 32.8% male students (n = 152). An examination of the participants' grade levels revealed that 36.2% were in the ninth grade, 21.6% in the tenth grade, 27.2% in the eleventh grade, and 14.2% in the twelfth grade. The participants' ages ranged from 13 to 18 years. Given that the study included individuals under the age of 18, parents were informed about the research and the necessary permissions were obtained through the "Parental Informed Consent and Consent Form." Additionally, all students were provided with information via the "Participant Informed Consent and Consent Form," ensuring their voluntary participation in the study.

The research protocol was rigorously reviewed and approved by the Balıkesir University Social Sciences and Humanities Ethics Commission (approval number 20381301/605.01/5619, dated July 26, 2021). The committee affirmed that the study posed no identifiable risks to participants. The document provided a comprehensive overview of the study's objectives, procedures, data confidentiality measures, and the voluntary nature of participation, which included the right to withdraw at any point without penalty. Participants were required to provide



Fig. 1 The Relationship between Attachment, Social Exclusion and Risky Behaviors

electronic consent before completing the anonymous self-report questionnaires, which took approximately 35 min to complete in their entirety.

To ensure the validity and reliability of participants' responses, several measures were implemented following data collection. First, responses were screened for completeness, with surveys containing more than 20% missing data deemed invalid and excluded from further analysis. Additionally, logical consistency was assessed by incorporating three attention-check questions (e.g., "Please select 'strongly agree' for this question"), which participants were required to answer correctly in order to confirm their attentiveness throughout the survey. Surveys exhibiting inconsistent or suspicious response patterns, such as identical answers across all items or extreme response sets with little variation, were flagged as invalid and removed from analysis.

Data collection tools

In order to collect data in the study, the Parent and Peer Attachment Inventory was used to determine the attachment feelings of adolescents, the Ostracism (Social Exclusion) Scale for adolescents was used to measure the level of social exclusion, and the Risky Behaviors Scale was used to determine risky behaviors.

Parent and peer attachment inventory

The Mother-Father and Peer Attachment Inventory, developed by Armsden and Greenberg [43] and adapted into Turkish by Kocayörük [44], consists of 54 items (18 items for mother attachment, 18 items for father attachment, and 18 items for peer attachment), using a five-point Likert scale. The internal consistency coefficients for the sub-dimensions of the inventory ranged from 0.89 to 0.92. Based on the data collected for this study, the overall alpha reliability coefficients for the scale was found to be 0.93. The reliability coefficients for the sub-dimensions were calculated as 0.93 for the maternal attachment sub-dimension, and 0.91 for the peer attachment sub-dimension.

Social ostracism scale

The Ostracism (Social Exclusion) Scale for Adolescents, developed by Gilman et al. [45] and adapted into Turkish by Akın, Uysal, and Akın [46], consists of 11 items divided into two sub-dimensions: disregard and exclusion. The scale uses a 5-point Likert scale (1=Never, 2=Rarely, 3=Often, 4=Usually, 5=Always), with no reverse-coded items. Higher scores indicate a greater perception of social exclusion. The maximum score that can be obtained from the scale is 55, and the minimum score is 11. The disregard sub-dimension contains 5 items, while the exclusion sub-dimension consists of 6 items. The Cronbach's alpha internal consistency reliability coefficient for the Turkish version of the scale was found to be 0.89. Based on the data collected for this study, the Cronbach's alpha reliability coefficient for this scale was also 0.89. The reliability coefficients for the subdimensions were calculated as 0.84 for the disregard subdimension and 0.90 for the exclusion sub-dimension.

Risky behaviors scale (RSBS)

The Risky Behaviors Scale, developed by Gençtanırım [33], was used to assess the risky behaviors of adolescents. The subscales were designed based on the Problem Behavior Theory, considering commonly observed risky behaviors. The scale consists of a total of 36 items, evaluated across six subscales, and is based on a fivepoint Likert scale (1 = definitely not appropriate, 2 = notappropriate, 3 = partially appropriate, 4 = appropriate, 5 = definitely appropriate). The subscales include: antisocial behaviors, alcohol use, and school dropout, each with seven items; smoking, with six items; eating habits, with five items; and suicidal tendencies, with four items. The total score on the scale ranges from 36 to 180, with higher scores indicating a greater frequency of risky behaviors. Based on the data collected for this study, the Cronbach's alpha reliability coefficient for this scale was found to be 0.90.

Data analysis

For the purposes of this research, the SPSS 21 software program was used. Pearson's Product Moment Correlation (r) coefficient and Spearman's Rank-Order Correlation (rs) were employed to examine the relationships between risky behaviors, attachment, and social exclusion. In these coefficients, values range from +1 to -1, where +1 indicates a strong positive significant relationship, and -1 indicates a strong negative significant relationship (Büyüköztürk, 2018). To assess differences in risky behaviors, social exclusion, and attachment among adolescents based on gender and parents' separation/ cohabitation status, the t-test for independent samples and the Mann-Whitney U Test were used. To investigate differences in risky behaviors, social exclusion, and attachment according to school type and grade level, ANOVA and the Kruskal-Wallis H Test were employed [42].

Findings

Descriptive statistics of maternal, paternal and peer attachment, social exclusion and risky behavior tendencies variables and their sub-factors are given in Table 1.

According to the findings presented in Table 1, the skewness and kurtosis coefficients for the attachment sub-dimensions (mother attachment, father attachment, and peer attachment), the social exclusion

Table 1 Descriptive statistics (N=463)

		Mean	SD	Skewness	Kurtosis
Attachment	Mother	69,54	16,04	-0,79	-0,19
	Father	62,84	17,97	-0,32	-0,84
	Peer	69,14	14,97	-0,74	0,01
Social	Disregard	8,80	4,81	1,46	1,61
Exclusion	Exclusion	15,57	7,02	0,48	-0,75
	Total Score	24,38	10,22	0,80	0,12
Risky Behaviors	Antisocial Bebavior	14,06	5,54	1,08	0,07
		867	161	3 50	13.66
	Cigarette	10,05	6,51	1,81	2,15
	Suicide	12,95	3,67	-0,03	-0,42
	Nutrition	13,96	4,61	0,12	-0,38
	School Dropout	10,40	5,35	2,19	5,05
	Total Score	70,12	20,77	1,56	3,39

sub-dimensions (exclusion and total social exclusion score), and the risky behaviors sub-dimensions (antisocial behaviors, suicidal tendencies, and eating habits) were within the range of -1.5 to +1.5. Therefore, these variables were deemed to follow a normal distribution, and parametric analyses were conducted. However, since the skewness and kurtosis coefficients for the "being ignored" sub-dimension of social exclusion, as well as for the variables of alcohol use, smoking, school dropout, and the total risky behaviors score, fell outside this range, it was concluded that these variables did not conform to a normal distribution. As a result, nonparametric analyses were applied [47].

Pearson's Product Moment Correlation (r) or Spearman's Rank-Order Correlation (rs) analysis was employed to examine the relationship between attachment levels and risky behavior levels in adolescents. The results of the analysis are presented in Table 2.

Table 2 demonstrates a negative and moderately significant relationship between attachment to one's mother and several variables, including suicidal tendencies (r =-0.37, p < 0.05), school dropout rates (rs = -0.33, p < 0.05), and overall risky behavior scores (rs = -0.37, p < 0.05). Additionally, attachment to one's mother exhibits a negative but weaker relationship with antisocial behaviors (r = -0.25, p < 0.05), alcohol use (rs = -0.14, p < 0.05), smoking (rs = -0.15, p < 0.05), and eating habits (r = -0.11, p < 0.05).

A statistically significant, negative, and low-level correlation was identified between attachment to the father and several variables, including antisocial behaviors (r = -0.24, p < 0.05), smoking (rs = -0.18, p < 0.05), suicidal tendencies (r = -0.31, p < 0.05), school dropout (rs = -0.24, p < 0.05), and the total score for risky behaviors (rs = -0.32, p < 0.05). Conversely, no significant relationship was observed between attachment to the father and alcohol use (rs = -0.08, p > 0.05) or eating habits (r = -0.08, p > 0.05).

The peer attachment variable was found to have significant negative correlations with antisocial behavior (r = -0.24, p < 0.05), alcohol use (rs = -0.09, p < 0.05), smoking (rs = -0.12, p < 0.05), suicidal tendencies (r = -0.13, p < 0.05), school dropout (rs = -0.22, p < 0.05), and the total score for risky behaviors (rs = -0.18, p < 0.05). However, no significant relationship was observed between peer attachment and eating habits (r = 0.07, p > 0.05).

To examine the relationship between social exclusion levels and risky behavior levels among adolescents, either the Pearson Product-Moment Correlation Coefficient (r) or the Spearman-Brown Rank-Order Correlation Coefficient (rs) was employed, depending on the distribution of the data. The results of the correlation analysis are presented in Table 3.

The analysis presented in Table 3 indicates a statistically significant positive relationship between the experience of being ignored and the total social exclusion score (rs = 0.72, p < 0.05). Additionally, a significant positive association was observed between being ignored and the exclusion dimension (rs = 0.45, p < 0.05). Moderate positive correlations were also found between being ignored and antisocial behaviors (rs = 0.19, p < 0.05), suicidal tendencies (rs = 0.27, p < 0.05), school dropout rates

	1	2	3	4	5	6	7	8	9	10
1	1									
2	0,60*	1								
3	0,31*	0,28*	1							
4	-0,25*	-0,24*	-0,24*	1						
5	-0,14*	-0,08	-0,09*	0,26*	1					
6	-0,15*	-0,18*	-0,12*	0,38*	0,50*	1				
7	-0,37*	-0,31*	-0,13*	0,35*	0,12*	0,20*	1			
8	-0,11*	-0,08	0,07	0,32*	0,11*	0,19*	0,31*	1		
9	-0,33*	-0,24*	-0,22*	0,42*	0,37*	0,39*	0,33*	0,21*	1	
10	-0.37*	-0.32*	-0.18*	0.74*	0.49*	0.66*	0.58*	0.57*	0.64*	1

Table 2 Correlation analysis (r, rs) results of attachment and risky behaviors (N = 463)

1=Maternal Attachment, 2=Paternal Attachment, 3=Peer Attachment, 4=Antisocial Behaviors, 5=Alcohol Use, 6=Smoking, 7=Suicidal Tendency, 8=Eating Habits, 9=School Dropout, 10=Risky Behaviors Total Score, *= p<0.05

	1	2	3	4	5	6	7	8	9	10
1	1									
2	0,45*	1								
3	0,72*	0,91*	1							
4	0,19*	0,10*	0,19*	1						
5	0,07	0,01	0,04	0,26	1					
6	0,04	0,04	0,00	0,38	0,50*	1				
7	0,27*	0,06	0,16*	0,35*	0,12*	0,20*	1			
8	-0,01	-0,16*	-0,12*	0,32*	0,11*	0,19*	0,36*	1		
9	0,24*	0,14*	0,20*	0,42*	0,37*	0,39*	0,33*	0,21*	1	
10	0,17*	0,00	0,08	0,74*	0,49*	0,66*	0,58*	0,57*	0,64*	1

Table 3 Correlation analysis (r, rs) results of social exclusion and risky behaviors (N=463)

1=Disregard, 2=Exclusion, 3=Social Exclusion Total, 4=Antisocial Behavior, 5=Alcohol Use, 6=Smoking, 7=Suicidal Tendency, 8=Eating Habits, 9=School Dropout, 10=Risky Behaviors Total Score, *=p<0.05.

Table 4 T TesT analysis results (N = 463)

		Group	N	Mean	SD	t	sd	р
Attachment	Mother	Female	311	69,18	16,57	-0,72	329,04	0,47
		Male	152	70,28	14,94			
	Father	Female	311	61,57	18,23	-2,18	461	0,02*
		Male	152	65,44	17,18			
	Peer	Female	311	69,99	14,82	1,74	461	0,08
		Male	152	67,41	15,16			
Social Exclusion	Exclusion	Female	311	15,47	7,24	-0,44	461	0,65
		Male	152	15,78	6,57			
	Total	Female	311	24,40	10,58	0,06	461	0,94
		Male	152	24,33	9,47			
Risky Behaviors	Antisocial Behavior	Female	311	13,64	5,39	-2,33	461	0,02*
		Male	152	14,92	5,77			
	Suicidal Tendency	Female	311	13,20	3,55	2,06	461	0,03*
		Male	152	12,45	3,85			
	Eating Habits	Female	311	14,26	4,42	2,00	461	0,04*
		Male	152	13,35	4,93			

* = p < 0.05

(rs = 0.24, p < 0.05), and the total risky behaviors score (rs = 0.17, p < 0.05). Conversely, no significant relationships were identified between the variable of not caring and alcohol use (rs = 0.07, p > 0.05), smoking (rs = 0.04, p > 0.05), or eating habits (r = -0.01, p > 0.05).

A significant and strong positive correlation was identified between the exclusion variable and the total score of social exclusion (r=0.91, p<0.05). Additionally, a low but significant positive correlation was observed between the exclusion variable and antisocial behaviors (r=0.10, p<0.05) as well as school dropout (rs=0.14, p<0.05). Conversely, a low but significant negative correlation was found between the exclusion variable and eating habits (r = -0.16, p<0.05). No significant correlations were observed between the exclusion variable and alcohol use (rs=0.01, p>0.05), smoking (rs=0.04, p>0.05), suicidal tendencies (r=0.06, p>0.05), or the total score of risky behaviors (r=0.00, p>0.05).

Furthermore, the social exclusion total score demonstrated a low but significant positive correlation with antisocial behaviors (r = 0.19, p < 0.05), suicidal tendencies (r = 0.16, p < 0.05), and school dropout (rs = 0.20, p < 0.05). A low but significant negative correlation was also observed between the social exclusion total score and eating habits (r = -0.12, p < 0.05). However, no significant correlations were found between the social exclusion total score and alcohol use (rs = 0.04, p > 0.05), smoking (rs = 0.08, p > 0.05), or the total score of risky behaviors (rs = 0.08, p > 0.05).

In order to determine whether the level of attachment (parental and peer), social exclusion (exclusion and total) and risky behaviors (antisocial behaviors, suicidal tendency and eating habits) in adolescents differ according to gender variable, t test for related samples was used. The results of the analysis are shown in Table 4.

According to the findings in Table 4, the analysis revealed no significant differences in the mean scores of the variables of maternal attachment (t329.04 = -0.72, p > 0.05), social exclusion (t461=0.06, p > 0.05), peer attachment (t461=1.74, p > 0.05), and peer exclusion

	Group	N	Rank Mean.	Rank Total	U	z	р
Disregard	Female	311	237,18	73762,00	22026,000	-1,22	0,22
	Male	152	221,41	33654,00			
Alcohol Use	Female	311	216,14	67220,50	18704,50	-4,89	0,00*
	Male	152	264,44	40195,50			
Smoking	Female	311	211,60	65807,00	17291,00	-4,96	0,00*
	Male	152	273,74	41609,00			
School Dropout	Female	311	211,59	65803,50	17287,50	-4,91	0,00*
	Male	152	273,77	41612,50			
Risky Behaviors	Female	311	219,47	68255,00	19739,00	-2,88	0,00*
	Male	152	257,64	39161,00			

Table 5 Mann Whitney U test results (N=463)

* = *p* < 0.05

(t461 = -0.44, p > 0.05) between the subgroups based on gender.

A significant difference was observed between the mean scores of the subgroups based on gender for the father attachment variable among adolescents in the sample (t(461) = -2.18, p < 0.05). The findings suggest that male adolescents (M = 65.44) exhibit a higher level of attachment to their fathers compared to female adolescents (M = 61.57).

A significant difference was observed between the mean scores of antisocial behaviors among adolescent subgroups categorized by gender (t461) = -2.33, p < 0.05). Specifically, male adolescents (M = 14.92) demonstrated higher levels of antisocial behaviors compared to their female counterparts (M = 13.64).

A significant difference was found between the mean scores of the subgroups based on gender concerning the suicidal tendency variable among adolescents in the sample (t461) = 2.06, p < 0.05). The results indicate that female adolescents (M = 13.20) exhibit a higher level of suicidal tendency compared to their male counterparts (M = 12.45).

A statistically significant difference was found between the mean scores of adolescents in the sample on the eating habits variable and the mean scores of subgroups classified by gender (t461) = 2.00, p < 0.05). Specifically, female adolescents (M = 14.26) demonstrated higher levels of healthy eating habits compared to male adolescents (M = 13.35).

The Mann-Whitney U test was employed to examine potential gender differences in social exclusion (being ignored) and risky behaviors (alcohol consumption, smoking, school dropout, and overall score) among high school adolescents. The results of the Mann-Whitney U test are presented in Table 5.

The analysis presented in Table 5 reveals that the level of neglect among adolescents in the sample did not exhibit a statistically significant difference based on gender (U = 22026.000, z = -1.22, p > 0.05). However, a significant difference was observed in the level of alcohol use

among adolescents, with gender serving as a differentiating factor (U = 18704.50, z = -4.89, p < 0.05). Specifically, male adolescents (Rank Mean = 264.44) were found to be at a higher risk of alcohol use compared to their female counterparts (Rank Mean = 216.14).

It was found that the level of smoking of adolescents in the sample differed significantly according to gender (U=17291.00, z= -4.96, p<0.05). The results indicate that male adolescents (Rank Mean=273.74) have a higher risk of smoking than female adolescents (Rank Mean=211.60).

It was found that the dropout level of the adolescents in the sample differed significantly according to gender (U = 17287.50, z= -4.91, p < 0.05). The results indicate that male adolescents (Rank Mean = 273.77) have a higher level of dropout tendency than female adolescents (Rank Mean = 211.59).

It was found that the total level of risky behaviors of the adolescents in the sample differed significantly according to gender (U = 19739.00, z= -2.88 p < 0.05). The results indicate that male adolescents (Rank Mean = 257.64) have a higher tendency towards risky behaviors than female adolescents (Rank Mean = 219.47).

Discussion and conclusion

The quality of adolescents' attachment relationships plays a crucial role in their emotional and behavioral development. In particular, secure maternal attachment serves as a key protective factor, strengthening adolescents' resilience during developmental challenges [9]. Analyses revealed a moderate negative association between maternal attachment and adolescents' suicidal tendencies, school dropout rates, and engagement in risky behaviors. Adolescents with stronger maternal bonds demonstrated lower rates of these maladaptive outcomes. Additionally, weaker but statistically significant negative correlations were found between maternal attachment and specific risky behaviors, including antisocial behavior, alcohol consumption, and smoking, suggesting a limited yet measurable protective effect. According to Bowlby [9], secure attachment formed in early childhood strengthens stress coping abilities and fosters healthy self-perception. During adolescence, secure attachment continues to support psychological adjustment and reduces the likelihood of risky behaviors [10]. However, maternal attachment alone is insufficient. External and internal factors—such as social environment, economic status, peer relationships, and individual traits—also critically influence adolescents' behavioral development [48, 49].

Analyses revealed low but significant negative associations between paternal attachment and several risky behaviors, including antisocial behavior, smoking, suicidal tendencies, school dropout, and general risk-taking [50-52]. These findings suggest that while paternal attachment may not serve as a strong protective factor, it can partially mitigate certain risky behaviors. However, the lack of significant associations with alcohol use and eating habits indicates that the father's influence may be limited to specific behavioral domains. This supports Bowlby's notion of the "primary attachment figure," typically fulfilled by the mother in many societies. Nonetheless, the observed negative associations highlight that paternal attachment still contributes to adolescents' risk perception and behavioral regulation [53]. In contrast, peer attachment demonstrated stronger and more consistent negative associations with risky behaviors, underscoring the critical influence of peer relationships during adolescence. Secure peer attachments may protect against risky behaviors by fostering social acceptance, enhancing self-esteem, and strengthening stress management skills [54–56]. Overall, the influence of attachment figures on adolescent behavior appears to vary, with the father's role being more situational and limited.

The quality of the father-adolescent relationship is strongly shaped by cultural and socioeconomic factors [57]. Research shows that adolescents exhibit fewer externalizing problems in families where fathers actively engage in parenting [58]. In Turkey, where the sample was drawn, the father is traditionally perceived as a figure of authority and discipline [59]. Thus, the father's protective role may be closely tied to family dynamics and cultural norms, highlighting the importance of considering contextual factors in attachment research.

Findings further suggest that maternal attachment exerts a stronger influence on adolescents' emotional and behavioral development compared to paternal attachment [60]. This may reflect mothers' greater responsiveness to their children's emotional needs, fostering deeper attachment bonds. Although fathers contribute significantly to adolescents' social and behavioral development, their overall influence appears to be more limited than that of mothers [61, 62]. The findings reveal significant associations between social exclusion and certain risky behaviors in adolescents. Strong positive correlations between perceived ostracism and feelings of social exclusion suggest that subjective experiences of being ignored or excluded can lead to substantial psychological distress when perceived as threatening [15]. However, weaker positive associations between perceived ignoring and specific behaviors, such as antisocial conduct, suicidal tendencies, and school dropout, indicate that social exclusion may primarily impair emotional and behavioral regulation rather than directly cause these behaviors [19, 63].

Conversely, the lack of significant associations between social exclusion and overt risky behaviors, such as alcohol use and smoking, suggests that these behaviors may be more influenced by peer dynamics and contextual factors like peer pressure or family conflict [64]. The weak negative correlation between social exclusion and dietary habits is consistent with prior findings linking social exclusion to impaired self-regulation and reduced selfcare behaviors [65, 66].

Moreover, the absence of significant associations between social exclusion and composite risk behavior scores highlights the multifactorial nature of risk behaviors, suggesting that exclusion alone does not singularly drive these outcomes [67]. A modest positive correlation between social exclusion and antisocial behavior was observed, possibly reflecting exclusion-induced anger and impulsivity in vulnerable adolescents [19]. However, the small effect size indicates the need for further research. Cultural factors, such as Turkey's collectivistic orientation and strong social solidarity norms, may buffer adolescents against the more severe psychological effects of social exclusion [68].

The negative correlation between social exclusion and unhealthy eating habits is notable and may reflect appetite loss or increased control over eating behaviors as a response to loneliness [69]. Additionally, the weak association between feelings of neglect and suicidal tendencies contrasts with predictions from Joiner's [70] interpersonal theory of suicide, which posits a stronger link through "perceived burdensomeness". This discrepancy may be attributable to sample characteristics, such as the collectivistic cultural context of Turkish society [68].

The findings also reveal gender differences in attachment and risky behaviors. Boys reported stronger attachment to their fathers than girls, a pattern consistent with Turkey's patriarchal family structure, where fathers traditionally serve as authority figures and protectors [68]. Within this cultural framework, boys may form closer, role-model-based relationships with their fathers, shaped by social expectations and gender norms. In contrast, lower paternal attachment among girls may result from fathers maintaining more distant and controlling relationships with daughters [71].

The higher levels of antisocial behavior observed in males may be linked to societal roles, where behaviors such as emotional suppression, displays of power, and risk-taking are more socially accepted in men [72]. Conversely, the higher prevalence of suicidal tendencies among females may be related to the internalization of suppressed emotions and limited social support. Studies suggest that women in Turkey are more likely to express psychological issues inwardly, and their willingness to seek help is often constrained [68, 73]. Additionally, females score higher on measures of eating habits, possibly due to greater societal pressures regarding physical appearance and health, which are amplified by media and cultural norms [74].

The higher proportion of female participants in the sample may have influenced the results, especially regarding psychological and behavioral dimensions such as suicidal tendencies and eating habits. This overrepresentation may limit the generalizability of the findings, potentially obscuring male responses. In the Turkish cultural context, where gender roles are strongly defined, women may be more likely to express emotional experiences openly [68, 73], making gender differences more complex to interpret. This sample imbalance underscores the need for caution in interpreting gender-based differences and highlights the importance of balanced samples in future studies.

The research findings show that male high school students are more likely to engage in risk behaviors, such as alcohol and tobacco use, and school dropout, compared to females. This pattern is closely linked to gender roles and cultural norms in Turkey. In traditional Turkish society, boys are often raised with more freedom, which exposes them to the outside world at an earlier age, increasing their likelihood of engaging in risky behaviors [68]. In contrast, girls are typically raised in more protective and supervised environments, reducing their inclination toward such behaviors. Similar trends are observed in Western societies, where studies from the United States report higher substance use and school dropout rates among male adolescents [75]. However, while gender differences in risk behaviors have diminished in Western societies over time, these differences remain prominent in cultures like Turkey, where traditional norms are stronger.

The higher proportion of female participants in this study relative to males raises concerns about the statistical power and representativeness of the findings. This imbalance may affect the assumption of homogeneity of variance and introduce bias in effect sizes and genderbased comparisons. The literature suggests that unequal sample sizes can influence the results of parametric tests, such as t-tests and ANOVA, requiring more cautious interpretation in such cases [47]. Despite the lower number of male participants, the higher levels of risky behavior observed in this group indicate that behavioral patterns may be more pronounced in males. To ensure

tributions in the sample. In light of these findings, it is essential for schools to implement targeted interventions to strengthen peer attachments and reduce social exclusion, thereby preventing risky behaviors. Research shows that strong peer attachments improve adolescents' sense of social acceptance and mitigate the negative psychological effects of exclusion [76, 77]. Effective strategies include introducing group-based social-emotional learning programs, establishing peer support groups, and organizing classroom activities that promote empathy and cooperation, all guided by teachers. These initiatives can enhance peer bonds and act as preventive measures against social exclusion.

the reliability and broader applicability of these results,

future research should aim for more balanced gender dis-

Given that the influence of attachment styles on social relationships and risky behaviors may evolve over time, future research should explore these effects through longitudinal studies. While the link between insecure attachment and risky behaviors in adolescence is well-established, further data are needed to determine whether this relationship persists into adulthood or changes through different mechanisms. Additionally, future studies could examine the impact of attachment styles and social exclusion on risky behaviors across varying socioeconomic and cultural contexts. Such research would offer valuable insights into the cultural adaptability of interventions.

This study has several limitations. First, the cross-sectional design prevents causal inferences regarding the directionality of the relationships between variables, limiting the ability to examine cause-and-effect dynamics. Additionally, reliance on self-reported data introduces the risk of social desirability bias, where participants may respond in ways that align with social expectations, potentially underestimating the prevalence of sensitive behaviors like suicidal ideation. This bias may affect the accuracy of the findings, especially in relation to risky behaviors. Moreover, the results may differ from Western literature due to the protective role of social support in collectivist cultures such as Turkey. Finally, the study's focus on a non-clinical sample may have overlooked relationships in individuals facing more severe psychological distress.

To address these limitations, future research could use longitudinal designs and mixed methods, including qualitative approaches, to allow for causal inferences. Additionally, comparative analyses including clinical subgroups and accounting for cultural factors would improve the generalizability of the findings.

Abbreviations

RSBS	Risky Behaviors Scale
SPSS	Statistical Package for the Social Sciences
ANOVA	Analysis of variance
r	Pearson's Product Moment Correlation
rs	Spearman's Rank-Order Correlation
U	Mann-Whitney U

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Author contributions

This research is derived from a master's thesis prepared by the second author under the supervision of the firdt author.FS contributed to the research process as a consultant, overseeing data analysis, reviewing and refining the literature, and transforming the master's thesis into an article format. AG was responsible for data collection, data entry, literature search, and the preparation and review of the manuscript. Both authors made equal contributions to the study.

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Data availability

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

This study was conducted in full accordance with ethical principles and guidelines. The research protocol was thoroughly reviewed and approved by the Balıkesir University Social Sciences and Humanities Ethics Commission (document number 20381301/605.01/5619, dated July 26, 2021). The relevant ethics committee approval can be accessed via the following link: https://ww wturkiye.gov.tr/balikesir-universitesi-ebys. The committee confirmed that the research presented no foreseeable risks to participants. All procedures were in strict compliance with established ethical standards and regulations. Written informed consent was obtained from all participants, who were fully informed about the aims of the study, given ample opportunity to ask questions, and participated voluntarily, with the assurance that they could withdraw at any time without any repercussions.

Consent for publication

Not applicable.

Footnotes

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Competing interests

The authors declare no competing interests.

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References

- 1. Coleman JC. The nature of adolescence. Routledge; 2011.
- Steinberg L. The influence of neuroscience on US supreme court decisions about adolescents' criminal culpability. Nat Rev Neurosci. 2013;14(7):513. http s://doi.org/10.1038/nrn3509.
- Bacanlı F. Career decision-making difficulties of Turkish adolescents. Int J Educ Vocat Guid. 2016;16(2):233–50.
- Maslow AH. Notes on Being-Psychology. J Humanistic Psychol. 1962;2(2):47– 71. https://doi.org/10.1177/002216786200200205.

- Scholte RHJ, et al. Peer relations in adolescence. Handbook of adolescent development. Psychology; 2020. pp. 175–99.
- Williams KD, Nida SA, editors. Ostracism, exclusion, and rejection. New York, NY: Routledge; 2017.
- Killen M. Et al. Social exclusion in childhood and adolescence. Handbook of peer interactions, relationships, and groups, The Guilford Press, 2009, 249–266.
- 8. Bretherton I. The origins of attachment theory: John Bowlby and Mary Ainsworth. Attachment theory. Routledge; 2013. pp. 45–84.
- 9. Bowlby J, et al. The origins of attachment theory. Dev Psychol. 1992;28(5):759–75.
- Allen J, et al. A secure base in adolescence: markers of attachment security in the mother–adolescent relationship. Child Dev. 2003;74(1):292–307. https://d oi.org/10.1111/1467-8624.t01-1-00536.
- Scharf M, et al. Parent–adolescent relationships and social adjustment: the case of a collectivistic culture. Int J Psychol. 2011;463:177–90. https://doi.org/ 10.1080/00207594.2010.528424.
- 12. Laible DJ, et al. Pathways to self-esteem in late adolescence: the role of parent and peer attachment, empathy, and social behaviours. J Adolesc. 2004;276:703–16. https://doi.org/10.1016/j.adolescence.2004.05.005.
- Zimmermann P. Attachment representations and characteristics of friendship relations during adolescence. J Exp Child Psychol. 2004;88(1):83–101. https:// doi.org/10.1016/j.jecp.2004.02.002.
- Fraley R, Rosiman G. The development of adult attachment styles: four lessons. Curr Opin Psychol. 2019;25:26–30. https://doi.org/10.1016/j.copsyc.2018 .02.008.
- 15. Williams KD, Ostracism. Ann Rev Psychol. 2007;58(1):425–52. https://doi.org/1 0.1146/annurev.psych.58.110405.085641.
- 16, Ding H, et al. Cyber-ostracism, depression, and adolescents' cyberbullying perpetration: A cross-lagged panel analysis. Youth Soc. 2025;57(2):351–73. htt ps://doi.org/10.1177/0044118X2413010.
- Rudert SC, et al. The experience of ostracism over the adult life span. Dev Psychol. 2020;5610:1999. https://doi.org/10.1037/dev0001096.
- Mulvey KL, et al. Causes and consequences of social exclusion and peer rejection among children and adolescents. Rep Emotional Behav Disorders Youth. 2017;17(3):71.
- Twenge JM, et al. If you can't join them, beat them: effects of social exclusion on aggressive behavior. J Personal Soc Psychol. 2001;81:6: 1058. https://doi.or g/10.1037/0022-3514.81.6.1058.
- Masten AS, et al. Developmental models of strategic intervention. Int J Dev Sci. 2009;3(3):282–91. https://doi.org/10.3233/DEV-2009-3306.
- Lev-Wiesel R, et al. Peer rejection during adolescence: psychological longterm effects—A brief report. J Loss Trauma. 2006;11(2):131–42. https://doi.org /10.1080/15325020500409200.
- 22. Mikulincer M, Shaver PR. Attachment orientations and emotion regulation. Curr Opin Psychol. 2019;25:6–10. https://doi.org/10.1016/j.copsyc.2018.02.00 6.
- Nesdale D, Lambert A. Effects of experimentally manipulated peer rejection on children's negative affect, self-esteem, and maladaptive social behavior. Int J Behav Dev. 2007;31(2):115–22. https://doi.org/10.1177/01650254070735 79.
- 24. Webb HJ, Zimmer-Gembeck MJ. The role of friends and peers in adolescent body dissatisfaction: A review and critique of 15 years of research. J Res Adolescence. 2014;24(4):564–90. https://doi.org/10.1111/jora.12084.
- Reijntjes A, et al. Peer victimization and internalizing problems in children: A meta-analysis of longitudinal studies. Child Abuse Negl. 2010;34(4):244–52. ht tps://doi.org/10.1016/j.chiabu.2009.07.009.
- 26. Platt B, et al. The role of peer rejection in adolescent depression. Depress Anxiety. 2013;30(9):809–21. https://doi.org/10.1002/da.22120.
- Sebastian C, et al. Social brain development and the affective consequences of ostracism in adolescence. Brain Cogn. 2010;72(1):134–45. https://doi.org/1 0.1016/j.bandc.2009.06.008.
- Hawes DJ, et al. Callous-unemotional traits and the treatment of conduct problems in childhood and adolescence: A comprehensive review. Clin Child Fam Psychol Rev. 2014;17:248–67. https://doi.org/10.1007/s10567-014-016 7-1.
- 29. Margolese SK, et al. Attachment to parents, best friend, and romantic partner: predicting different pathways to depression in adolescence. J Youth Adolesc. 2005;34:637–50. https://doi.org/10.1007/s10964-005-8952-2.
- Dykas MJ, Cassidy J. Attachment and the processing of social information across the life span: theory and evidence. Psychol Bull. 2011;137(1):19–46. htt ps://doi.org/10.1037/a0021367.

- De Gennaro M, Krumhuber EG, Lucas G. Effectiveness of an empathic chatbot in combating adverse effects of social exclusion on mood. Front Psychol. 2020;10:3061. https://doi.org/10.3389/fpsyg.2019.03061.
- 32. Jessor R. Risk behavior in adolescence: A psychosocial framework for Understanding and action. J Adolesc Health. 1991;12(8):597–605. https://doi.org/10 .1016/0273-2297(92)90014-S.
- Gençtanırım D, Ergene T. Development risk behaviors scale: validity and reliability studies. Int J Social Sci. 2014;25(1):125–38.
- Sezer F, İşgör İY. Determination of problem areas of students in primary and secondary education institutions (Erzurum Province Example). Natl Educ J. 2010;40(186):235–48.
- Chan HC. Risky sexual behavior of young adults in Hong Kong: an exploratory study of psychosocial risk factors. Front Psychol. 2021;12:658179. https://doi.org/10.3389/fpsyg.2021.658179.
- Shan H, Ishak Z, Li J. Rejection sensitivity and psychological capital as the mediators between attachment styles on social networking sites addiction. Front Educ. 2021;6. https://doi.org/10.3389/feduc.2021.58648.
- Schindler A, et al. Attachment and substance use disorders: A review of the literature and a study in drug dependent adolescents. Attach Hum Dev. 2005;7(3):207–28. https://doi.org/10.1080/14616730500173918.
- Thorberg FA, Lyvers M. Attachment, fear of intimacy and differentiation of self among clients in substance disorder treatment facilities. Addict Behav. 2006;31(4):732–7. https://doi.org/10.1016/j.addbeh.2005.05.050.
- Hawes DJ, et al. The effects of peer ostracism on children's cognitive processes. Eur J Dev Psychol. 2012;9(5):599–613. https://doi.org/10.1080/174056 29.2011.638815.
- Nesi J, Prinstein MJ. Using social media for social comparison and feedbackseeking: gender and popularity moderate associations with depressive symptoms. J Abnorm Child Psychol. 2015;43:1427–38. https://doi.org/10.1007 /s10802-015-0020-0.
- Sandstrom MJ, et al. Children's appraisal of peer rejection experiences: impact on social and emotional adjustment. Soc Dev. 2003;12(4):530–50. https://doi. org/10.1111/1467-9507.00247.
- 42. Büyüköztürk Ş, et al. Scientific research methods. Ankara: Pegem Akademi Publishing; 2016.
- Armsden GC, Greenberg MT. The inventory of parent and peer attachment: individual differences and their relationship to psychological well-being in adolescence. J Youth Adolesc. 1987;16(5):427–54. https://doi.org/10.1007/BF0 2202939.
- Kocayörük E. A Turkish adaptation of the inventory of parent and peer attachment: the reliability and validity study. Eurasian J Educational Res. 2010;40:133–51.
- Gilman R, et al. Validation of the ostracism experience scale for adolescents. Psychol Assess. 2013;25(2):319. https://doi.org/10.1037/a0030913.
- Akın A, Uysal R, Akın U. The validity and reliability of Turkish version of the ostracism experience scale for adolescents. Kastamonu Educ J. 2016:24(2):895–904.
- 47. Tabachnick BG. Using multivariate statistics. Boston, MA: Pearson; 2007.
- Steinberg L. A social neuroscience perspective on adolescent risk-taking. Biosocial theories of crime. Routledge; 2017. pp. 435–63.
- Yee Wan W, Tsui MS. Resilience for dropout students with depression in secondary schools in Hong Kong: parental attachment, hope and community integration. Asia Pac J Social Work Dev. 2020;30(2):78–92. https://doi.org/10.1 080/02185385.2019.1701544.
- 50. Furman W, Buhrmester D. Age and sex differences in perceptions of networks of personal relationships. Child Dev. 1992;63(1):103–15. https://doi.org/10.11 11/j.1467-8624.1992.tb03599.x.
- Lamb ME, et al. The development and significance of father-child relationships in two-parent families. The role of the father in child development. Volume 5. John Wiley & Sons, Inc.; 2010. p. 153. 94.
- Gao B, et al. Why mobile social media-related fear of missing out promotes depressive symptoms? The roles of phubbing and social exclusion. BMC Psychol. 2023;11(1):189. https://doi.org/10.1186/s40359-023-01231-1.
- Cabrera NJ, et al. The ecology of father-child relationships: an expanded model. J Family Theory Rev. 2014;6(4):336–54. https://doi.org/10.1111/jftr.120 54.
- Collins WA, Laursen B. Parent-adolescent relationships and influences. Handb Adolesc Psychol. 2004;331–61. https://doi.org/10.1002/9780471726746.ch11.

- Cox MJ, Harter KSM. Parent–child relationships. Well-Being. Psychology; 2003. pp. 191–204.
- Kottwitz A, et al. Genetic and environmental contributions to the subjective burden of social isolation during the COVID-19 pandemic. BMC Psychol. 2023;11(1):134. https://doi.org/10.1186/s40359-023-01174-7.
- Cabrera N, et al. Modeling the dynamics of paternal influences on children over the life course. Appl Dev Sci. 2007;11(4):185–9. https://doi.org/10.1080/1 0888690701762027.
- Sarkadi A, et al. Fathers' involvement and children's developmental outcomes: A systematic review of longitudinal studies. Acta Paediatr. 2008;97(2):153–8. h ttps://doi.org/10.1111/j.1651-2227.2007.00572.x.
- Kağıtçıbaşı Ç, Ataca B. Value of children and family change: A three-decade portrait from Turkey. Appl Psychol. 2005;54(3):317–37.
- 60. Parke RD. Development in the family. Annu Rev Psychol. 2004;55(1):365–99. h ttps://doi.org/10.1146/annurev.psych.55.090902.141528.
- Gilreath TD, et al. Associations between maternal closeness, suicidal ideation, and risk behaviors in cape town. Eur Child Adolesc Psychiatry. 2009;18:174–9. https://doi.org/10.1007/s00787-008-0718-4.
- 62. Lamb ME. How do fathers influence children's development? Let me count the ways. In: Lamb ME, editor. The role of the father in child development. 5th ed. John Wiley & Sons, Inc.; 2010. pp. 1–26.
- Prinstein MJ, La Greca AM. Childhood peer rejection and aggression as predictors of adolescent girls' externalizing and health risk behaviors: a 6-year longitudinal study. J Consult Clin Psychol. 2004;72(1):103. https://doi.org/10.1 037/0022-006X.72.1.103.
- Kuntsche E, et al. Why do young people drink? A review of drinking motives. Clin Psychol Rev. 2005;25(7):841–61. https://doi.org/10.1016/j.cpr.2005.06.002.
- Farrow CV, Fox CL. Gender differences in the relationships between bullying at school and unhealthy eating and shape-related attitudes and behaviours. Br J Educ Psychol. 2011;813:409–20. https://doi.org/10.1348/000709910X525 804.
- Duarte C, et al. The prospective associations between bullying experiences, body image shame and disordered eating in a sample of adolescent girls. Pers Indiv Differ. 2017;116:319–25. https://doi.org/10.1016/j.paid.2017.05.003.
- Jessor R. Risk behavior in adolescence: A psychosocial framework for Understanding and action. Dev Rev. 1992;12(4):374–90. https://doi.org/10.1016/027 3-2297(92)90014-S.
- Kağıtçıbaşı Ç. Family, self, and human development across cultures: theory and applications. Routledge; 2017.
- Luppino FS, et al. Overweight, obesity, and depression: a systematic review and meta-analysis of longitudinal studies. Arch Gen Psychiatry. 2010;67(3):220–9. https://doi.org/10.1001/archgenpsychiatry.2010.2.
- 70. Joiner T. Why people die by suicide. Harvard University Press; 2005.
- 71. Sunar D, Fişek G. Contemporary Turkish families. *Families in global perspective*. Allyn Bacon/Pearson. 2005;169:183.
- 72. Connell RW. Masculinities. Routledge; 2020.
- Eskin M, et al. Suicidal behavior and attitudes in Slovak and Turkish high school students: A cross-cultural investigation. Archives Suicide Res. 2014;18(1):58–73. https://doi.org/10.1080/13811118.2013.803448.
- 74. Ata RN, et al. The effects of gender and family, friend, and media influences on eating behaviors and body image during adolescence. J Youth Adolesc. 2007;36:1024–37. https://doi.org/10.1007/s10964-006-9159-x.
- Johnston LD, et al. Monitoring the future National survey results on drug use, 1975–2020: overview, key findings on adolescent drug use. Institute for social research; 2021.
- Wentzel KR. Peer relationships, motivation, and academic performance at school. In: Elliot AJ, Dweck CS, Yeager DS, editors. Handbook of competence and motivation: theory and application. 2nd ed. The Guilford; 2017. pp. 586–603.
- 77. Bukowski WM, et al. Handbook of peer interactions, relationships, and groups. Guilford Press; 2018.

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