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A Closer Look at Adolescent Mental Health: Prevalence of Internalizing and Externalizing Problems Across Educational and Gender Groups

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Abstract

Objective: Given the importance of mental health during adolescence and the considerable prevalence of psychological problems among this age group, along with the limited epidemiological data available in South Khorasan province, Iran, the present research focused on determining the prevalence of internalizing and externalizing problems in regional school-aged adolescents and analyzing related demographic characteristics.
Method: This descriptive cross-sectional study included 1,152 adolescents aged 12 to 19 years (mean age = 15.42, SD = 1.65) from Birjand City. A multistage random sampling method was employed to select the participants. Data were collected using the self-report version of the Strengths and Difficulties Questionnaire (SDQ), which measures internalizing and externalizing problems. To analyze the data, descriptive statistics were computed and comparative analyses were performed. Demographic variables such as age, gender, academic performance, school grade, and school type were also included in the analysis.
Results: The prevalence of internalizing problems among the participants was 36.8% (95% confidence interval: 34.0 to 39.6), whereas externalizing problems were identified in 15.2% (95% CI: 13.0 to 17.4). Internalizing problems were significantly more prevalent among girls (40.1%) than boys (32%). However, no significant gender difference was found in externalizing problems (girls: 14.5%, boys: 15.8%). Emotional problems (28.6%) and hyperactivity (10.4%) were significantly more common in girls, while peer problems (61.7%) and conduct problems (17.5%) were higher in boys ($P < 0.01$). Adolescents with poor academic performance and those attending public schools reported higher levels of psychological problems ($P < 0.01$).
Conclusion: Internalizing problems are more common than externalizing problems among adolescents. The main risk factors include being female, poor academic performance, and attending public schools. Mental health programs and interventions should prioritize these high-risk subgroups to enhance preventive and therapeutic outcomes.

Key words: *Adolescent; Anxiety Disorders; Mental Health; Mood Disorders; Prevalence; Problem Behavior*

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Adolescence is considered one of the most critical and turbulent stages of human development, marked by significant biological, cognitive, and social changes (1, 2). This transitional phase renders adolescents more vulnerable to psychological problems, which—if left unaddressed—can lead to serious consequences such as mental disorders or even suicidal behaviors (3, 4). Moreover, several factors can intensify these issues, including pubertal changes (5), family conflicts (6), peer pressure (7), excessive use of social media (8), and difficult economic conditions (7).

Adolescents' psychological problems cover a wide range of difficulties, which are commonly categorized into two groups: internalizing and externalizing problems (9). Internalizing problems are related to negative emotions such as anxiety, fear, depression, and social withdrawal (10). These issues often manifest as sadness, feelings of worthlessness, physical and emotional distress, and social isolation, which—if persistent—can develop into serious mood disorders (11). On the other hand, externalizing problems refer to behavioral dysregulation and negative actions such as defiance, aggression, hyperactivity, rule-breaking, and antisocial behaviors (12). These problems may increase the risk of suicidal thoughts or actions by raising impulsivity and lowering social functioning (4).

The co-occurrence of internalizing and externalizing problems is common among adolescents and can strongly affect their social and academic life, especially when symptoms from both categories are severe (13, 14). Research shows that internalizing problems tend to increase with age, while externalizing problems generally decrease over time (15). There is a moderate and positive correlation between externalizing and internalizing problems among adolescents (16). Moreover, externalizing problems significantly predict internalizing problems, particularly in girls, where increased externalizing behaviors are linked to higher levels of internalizing symptoms. On the other hand, factors such as gender, age, parental support, school bonding, association with substance-using peers, exposure to violence, and excessive use of social networks have been identified as influential, with parental support and school bonding recognized as key protective factors, while association with substance-using peers constitutes one of the most significant risk factors for externalizing problems (17). Previous studies indicate that girls may generally exhibit higher levels of both internalizing and externalizing problems (18). However, other findings suggest a gender-based tendency, with boys being more susceptible to externalizing behaviors and girls more likely to experience internalizing symptoms (19, 20). Overall, an increasing trend in internalizing problems and a decreasing trend in externalizing problems can be observed in both genders (21). In this regard, a causal relationship between externalizing problems and academic performance has been confirmed, whereas internalizing problems did not show such a direct association (22). Moreover, it has been demonstrated that the prevalence of internalizing problems is higher among students in gifted schools compared to those in regular schools (23).

Numerous studies have confirmed the relatively high prevalence of psychological problems among adolescents, both globally and in Iran. For example, the reported point and lifetime prevalence rates of psychiatric disorders are 23.9% and 35.8%, respectively (24). In a systematic review and meta-analysis, the prevalence of anxiety and depression among adolescents was estimated at 19.1% and 14.3%, respectively (25). Furthermore, during the COVID-19 pandemic, 28.6% of children and adolescents reported symptoms of depression, while 25.5% experienced symptoms of anxiety (26). In Ethiopia, the prevalence of internalizing and externalizing problems was reported at 24.2% and 11.9%, respectively, and were linked to factors such as gender, rural residence, low economic status, alcohol use, and bullying (3). Another study estimated the prevalence of internalizing and externalizing problems at 15.6% and 14.8%, respectively (27), while a prevalence rate of 40% was reported for internalizing problems among adolescents (20).

Similar studies have been carried out in Iran as well. In a national study, the overall prevalence of psychiatric disorders among children and adolescents was estimated at around 22.3%, with anxiety disorders (14.1%) and behavioral disorders (8.3%) being the most common (28). In South Khorasan Province, situated in eastern Iran, the overall prevalence of psychiatric disorders among children and adolescents has been reported at 15.2% (29). A systematic review reported the global prevalence of conduct disorder at approximately 8%, with boys being more affected than girls (30). In Kermanshah, a province in western Iran, the prevalence of internalizing and externalizing problems among adolescents was estimated at 7.4% and 7.1%, respectively (31). In another study across five Iranian provinces, oppositional defiant disorder (ODD) was found to be more common among girls, while attention deficit hyperactivity disorder (ADHD) was more frequent in boys (32). Among the studies conducted in Iran, one study focused solely on children who survived an earthquake in a specific area and was conducted using convenience sampling; therefore, the generalizability of its findings to the broader adolescent population is limited (31). Additionally, the use of a parent-report version may introduce reporting bias, potentially affecting the accuracy of the children's psychological assessment. In South Khorasan Province, epidemiological studies on adolescent psychological problems are very limited, with only one notable study conducted to date (29). Although that study had an adequate sample size, it did not specifically address internalizing and externalizing problems, it examined a

limited range of demographic variables, and its data from 2017 require updating.

Therefore, the present study aimed to estimate the prevalence of internalizing and externalizing problems among adolescents in South Khorasan Province and to examine these problems based on demographic characteristics to fill this information gap. Although adolescent mental health is influenced by numerous and complex factors—including hereditary predispositions, economic status, dispositional vulnerabilities, social relationships, and stress levels—these risk factors can be organized into three interrelated layers: individual traits and personality, family status and practices, and peer relationships along with the broader school climate (33). However, this study focused specifically on educational groups (school type, academic performance, and grade level) and gender groups. The results of this study can provide valuable evidence for policymakers and educational and health planners to design preventive interventions and promote adolescent mental health.

Materials and Methods

Research Design

This cross-sectional study (from February to March 2025) was conducted using a descriptive- analytical method. The target population consisted of secondary school students in South Khorasan Province, Iran, during the 2024–2025 academic year. Participants were selected through multi-stage random sampling from various types of schools, including public schools (free and government-run), private schools (tuition-based), Shahed schools (special schools prioritizing children of martyrs and veterans), gifted schools (for high-achieving students selected through competitive entrance exams), and exemplary schools (selective schools emphasizing academic excellence through entrance exams). Standardized self-report instruments were mainly administered in print form; however, due to limitations that necessitated online distribution in some schools, 133 questionnaires were distributed online. Inclusion criteria included informed willingness to participate, enrollment in lower or upper secondary school, and the absence of specific physical health problems. Exclusion criteria included concurrent psychological or medical interventions and invalid responses (defined as marking more than one option per item or the failure to respond to more than 15% of the items).

Population and Sample Size

This study utilized a multi-stage random sampling method. First, the city of Birjand was divided into two regions: north and south. Several schools within each region were randomly selected to participate in the study. Within the selected schools, certain classes were randomly chosen. Finally, students from these classes were randomly selected as participants. After collecting the questionnaires, preliminary checks were conducted to identify incomplete, invalid, or tampered questionnaires, which were excluded according to the exclusion criteria. Ultimately, a total of 1,152 students from 14 schools were included in the final analysis. The sample size was estimated using the Scalex Calculator tool (34), which is available as an Excel file. The entered parameters included a 95% confidence level, an expected prevalence of 14%, a margin of error of 2%, and an anticipated dropout rate of 10%. This yielded an initial sample size of 1,157 participants, and after accounting for the dropout rate, the final estimated sample size was 1,286. Ultimately, 1,152 participants were included in the analysis. To enhance accuracy, the data were screened for missing values and outliers. Questionnaires with over 15% missing responses were excluded, and multivariate outliers identified by Mahalanobis distance were removed to ensure data quality.

Instruments

The Strengths and Difficulties Questionnaire (SDQ) (35) was used to assess internalizing and externalizing problems. This instrument includes 25 items distributed across five subscales: prosocial behavior, peer problems, conduct problems, hyperactivity and emotional problems. Externalizing problem scores were computed by summing conduct problems and hyperactivity subscales, whereas internalizing problem scores combined emotional and peer problem subscales. Items are rated on a three-point Likert scale (0 = not true, 1 = somewhat true, 2 = certainly true), yielding a total score ranging from 0 to 40, with prosocial behavior excluded from the total. The instrument has shown acceptable reliability (Cronbach's alpha = 0.73; test-retest reliability = 0.62) (35) with similar findings in Iran (Cronbach's alpha = 0.74) (36). In the present study, Cronbach's alpha coefficients were 0.78 for the total difficulties score, 0.71 for internalizing problems, and 0.68 for externalizing problems. The structure of the questionnaire was supported by results from confirmatory factor analysis. According to standard SDQ classifications (3, 35), total difficulties were categorized as normal ($\leq$ 15), borderline (16–19), and abnormal ($\geq$ 20). For internalizing problems, scores up to 7 were considered normal, 8 was borderline, and scores from 9 to 20 were classified as abnormal. For externalizing problems, scores up to 8 were regarded as normal, 9 as borderline, and scores between 10 and 20 as abnormal. In this study, the borderline score was not considered a threshold for psychological problems, and only the abnormal group score was taken into account.

In addition, a researcher-designed questionnaire was used to collect demographic information from participants. Adolescents self-reported their age, gender (male or female), grade level (7 to 12), type of school (public, private, Shahed, gifted and exemplary schools), school level (lower and upper secondary), and academic performance, measured by their grade point average (GPA). This questionnaire aimed to capture key socio-

educational variables that might influence internalizing and externalizing problems.

Data Analysis

Data analysis was performed using SPSS version 26. Descriptive statistics such as means, standard deviations, and percentages were computed to summarize the data. Given the nature of the variables under study, appropriate statistical tests were applied. Group comparisons for qualitative variables—such as academic performance (categorized into weak, average, and strong), type of school (public, gifted, exemplary, Shahed, and private), and school level (lower and upper secondary)—were conducted using the Chi-square test (χ^2), as the variables were measured on a nominal scale. Additionally, Pearson's correlation test was employed to examine the relationship between continuous scores of internalizing and externalizing problems and other continuous variables. Furthermore, to assess the simultaneous effects of demographic variables on internalizing and externalizing problems, multiple linear regression analyses were conducted. A P-value of less than 0.05 was considered statistically significant for all analyses.

Ethical Consideration

At the initial stage of the study, after obtaining an official introduction letter from the university, the necessary permission was acquired from the Education Department of Birjand City. Additionally, before conducting the research, an ethics approval code was obtained. The ethics approval number for the present study is IR.BIRJAND.REC.1403.040. To uphold ethical principles, the questionnaire instructions emphasized the confidentiality of students' information and the voluntary nature of participation. Moreover, throughout all stages of the research—including literature review, manuscript preparation, data collection, and analysis—key ethical principles such as participant privacy, confidentiality, integrity, and honesty were strictly observed.

Results

Among the participants, 481 individuals (41.8%) were boys and 671 individuals (58.2%) were girls. A total of 448 students (38.7%) were enrolled in the lower secondary level, and 707 students (61.3%) were in the upper secondary level. The highest frequency was reported in the tenth grade with 368 students (31.9%), and the lowest frequency was in the ninth grade with 112 students (9.7%). Most students attended public schools (800 students, 69.2%), while the fewest attended Exemplary schools (58 students, 5%). Participants had an average age of 15.42 years (SD = 1.65).

The mean score for emotional problems was 4.39 (SD = 2.54), and for peer problems was 2.88 (SD = 1.85). The total internalizing mean score was 7.28 (SD = 3.59). In the externalizing dimension, behavioral problems had a mean of 2.46 (SD = 1.82), and hyperactivity had a mean of 3.48 (SD = 2.13). The overall mean externalizing score was 5.93 (SD = 3.44). Skewness and kurtosis indices for all variables were within acceptable ranges. Table 1 presents the psychological status of students across three levels—normal, borderline, and abnormal—separated by gender.

Table 1. Prevalence of Internalizing and Externalizing Problems Among Birjandi Adolescents

Variables	Gender	Psychological status categories			χ^2 (df)	P value
		Normal (%)	Borderline (%)	Abnormal (%)		
Emotional Problems	Girls	393 (58.6%)	86 (12.8%)	192 (28.6%)	29.64 (2)	< 0.01
	Boys	355 (73.8%)	46 (9.6%)	80 (16.6%)		
	Total	748 (64.9%)	132 (11.5%)	272 (23.6%)		
Peer Problems	Girls	469 (69.9%)	151 (22.5%)	51 (7.6%)	9.19 (2)	0.010
	Boys	54 (11.2%)	130 (27%)	297 (61.7%)		
	Total	766 (66.5%)	281 (24.4%)	105 (9.1%)		
Internalizing Problems	Girls	335 (49.9%)	67 (10%)	269 (40.1%)	8.59 (2)	0.014
	Boys	280 (58.2%)	47 (9.8%)	154 (32%)		
	Total	615 (53.4%)	114 (9.9%)	423 (36.7%)		
Conduct Problems	Girls	525 (78.2%)	67 (10%)	79 (11.8%)	11.73 (2)	0.003
	Boys	334 (69.4%)	63 (13.1%)	84 (17.5%)		
	Total	859 (74.6%)	130 (11.3%)	163 (14.1%)		
Hyperactivity Problems	Girls	544 (81.1%)	57 (8.5%)	70 (10.4%)	6.22 (2)	0.04
	Boys	408 (84.8%)	43 (8.9%)	30 (6.2%)		
	Total	952 (82.6%)	100 (8.7%)	100 (8.7%)		
Externalizing Problems	Girls	527 (78.5%)	47 (7%)	97 (14.5%)	0.41 (2)	0.81
	Boys	371 (77.1%)	34 (7.1%)	76 (15.8%)		
	Total	898 (78%)	81 (7%)	173 (15%)		
Total Psychological Problems (SDQ)	Girls	425 (63.3%)	134 (20%)	112 (16.7%)	1.79 (2)	0.41
	Boys	323 (67.1%)	86 (17.9%)	72 (15%)		
	Total	748 (64.9%)	220 (19.1%)	184 (16%)		

According to Table 1, 36.7% of the students had abnormal status in the internalizing problems index (including 23.6% with emotional problems and 9.1% with peer problems). In contrast, 15% had abnormal externalizing problems (14.1% behavioral problems and 8.7% hyperactivity). The total score for psychological problems was also reported as abnormal in 16% of students. Gender-specific comparisons showed that girls were significantly more affected by emotional problems (28.6% vs. 16.6%, P < 0.01) and hyperactivity (10.4% vs. 6.2%, P = 0.04), whereas boys were more vulnerable to peer problems (61.7% vs. 7.6%, P = 0.010) and behavioral problems (17.5% vs. 11.8%, P = 0.003). However, girls (16.7%) and boys (15%) did not differ significantly in total psychological difficulties. Next, Table 2 is presented to examine the relationships among the components of the SDQ questionnaire.

Table 2. Correlation between Internalizing and Externalizing Problems Among Birjandi Adolescents

Variables	Emotional Problems	Peer Problems	Internalizing Problems	Conduct Problems	Hyperactivity Problems	Externalizing Problems	SDQ
Emotional Problems	1						
Peer Problems	0.32**	1					
Internalizing Problems	0.87**	0.74**	1				
Conduct Problems	0.34**	0.26**	0.37**	1			
Hyperactivity Problems	0.44**	0.24**	0.44**	0.51**	1		
Externalizing Problems	0.45**	0.29**	0.47**	0.84**	0.89**	1	
SDQ	0.78**	0.61**	0.86**	0.70**	0.77**	0.85**	1

Note. SDQ: Total score of The Strengths and Difficulties Questionnaire
** p < 0.05. ** p < 0.01.*

The results of Table 2 showed that all correlation coefficients were significant at the 0.01 level. The total SDQ score had the highest correlations with internalizing problems (r = 0.86) and externalizing problems (r = 0.85). A positive correlation was also found between Internalizing and externalizing problems (r = 0.47). Additionally, emotional problems were significantly associated with peer problems (r = 0.32), and behavioral problems showed a strong correlation with hyperactivity (r = 0.51), indicating these related constructs share common variance. Overall, increases in the scores of specific components led to an increase in the total score of psychological problems. Table 3 is dedicated to examining the prevalence of psychological problems according to school type, academic performance, and school level.

Table 3. Comparison of the Prevalence of Internalizing and Externalizing Problems among Birjandi Adolescents by School type, Academic Performance and school level

Outcome	Variable	Category	Normal	Borderline	Abnormal	χ^2 (df)	P value
Internalizing problems	School type	Public	443 (55.51%)	74 (9.27%)	281 (35.21%)	25.60 (2)	< 0.01
		Shahed	52 (55.53%)	13 (13.13%)	34 (34.34%)		
		Exemplary	37 (63.79%)	6 (10.34%)	15 (25.86%)		
		Gifted	44 (51.76%)	11 (12.94%)	30 (35.29%)		
		Private	39 (34.82%)	10 (8.93%)	63 (56.25%)		
	Academic Performance	Weak	26 (35.14%)	7 (9.46%)	41 (55.41%)	16.81 (2)	0.02
		Average	95 (47.98%)	23 (11.62%)	80 (40.40%)		
		Strong	494 (56.14%)	84 (9.55%)	302 (34.32%)		
	School level	Lower	252 (56.25%)	40 (8.93%)	156 (34.82%)	2.54 (2)	0.28
		Upper	363 (51.56%)	74 (10.51%)	267 (37.93%)		
Externalizing problems	School type	Public	609 (76.32%)	61 (7.64%)	128 (16.04%)	9.09 (8)	0.34
		Shahed	83 (83.84%)	5 (5.05%)	11 (11.11%)		
		Exemplary	52 (89.66%)	3 (5.17%)	3 (5.17%)		
		Gifted	67 (78.82%)	6 (7.06%)	12 (14.12%)		
		Private	87 (77.68%)	6 (5.36%)	19 (16.96%)		
	Academic	Weak	35 (47.30%)	9 (12.16%)	30 (40.54%)	48.70 (4)	< 0.01

Outcome	Variable	Category	Normal	Borderline	Abnormal	χ^2 (df)	P value
Total Psychological Problems (SDQ)	performance	Average	152 (76.77%)	17 (8.59%)	29 (14.65%)		
		Strong	711 (80.80%)	55 (6.25%)	114 (12.95%)		
	School level	Lower	331 (73.88%)	42 (9.38%)	75 (16.74%)	8.73 (2)	0.013
		Upper	567 (80.54%)	39 (5.54%)	98 (13.92%)		
	School type	Public	525 (65.79%)	151 (18.92%)	122 (15.29%)	21.77 (8)	0.005
		Shahed	63 (63.64%)	21 (21.21%)	15 (15.15%)		
		Exemplary	48 (82.76%)	4 (6.90%)	6 (10.34%)		
		Gifted	53 (62.35%)	12 (14.12%)	20 (23.53%)		
		Private	59 (52.68%)	32 (28.57%)	21 (18.75%)		
	Academic performance	Weak	29 (37.19%)	12 (16.22%)	33 (44.59%)	53.15 (4)	< 0.01
		Average	120 (60.61%)	43 (21.72%)	35 (17.68%)		
		Strong	599 (68.07%)	165 (18.75%)	116 (13.18%)		
	School level	Lower	290 (64.73%)	93 (20.76%)	65 (14.51%)	2.05 (2)	0.36
		Upper	458 (65.06%)	127 (18.04%)	119 (16.90%)		

Examination of the results in Table 3 showed that type of school, academic performance, and school level had significant associations with both internalizing and externalizing problems ($P < 0.05$). However, no significant relationship was observed between externalizing problems and the type of school ($P > 0.01$). Regarding the total score of psychological problems, students in public schools and those with poor academic performance had worse conditions, but no significant difference was reported based on school level ($P > 0.01$). Given that adolescent psychological problems are influenced by multiple complex factors, linear regression analyses were conducted to examine the simultaneous effects of demographic variables on internalizing and externalizing problems. All assumptions of regression analysis were checked and met. The results of these analyses are presented in Table 4.

Table 4. Multiple Linear Regression Results for Predicting Internalizing and Externalizing Problems Birjandi Adolescents

+	Predictor Variable	B	SE	β	t	P	F (df)	R^2
Internalizing problems	Gender	-0.89	0.22	-0.12	-4.14	< 0.01	15.92 (4,1147)	0.053
	Academic performance	-1.27	0.18	-0.21	-6.87	< 0.01		
	School level	-0.23	0.25	-0.03	-0.92	0.36		
	School type	0.23	0.07	0.12	3.42	< 0.01		
Externalizing problems	Gender	-0.68	0.21	-0.10	-3.28	0.01	14.83 (4,1147)	0.049
	Academic performance	-1.24	0.18	-0.21	-7.02	< 0.01		
	School level	-0.89	0.24	-0.13	-3.74	< 0.01		
	School type	0.13	0.06	0.07	2.01	0.04		

As shown in Table 4, regression analyses examined the combined effects of demographic variables on adolescents' internalizing and externalizing problems. For internalizing problems, the model was significant ($P < 0.01$) and accounted for about 5.3% of the variance. Gender and academic performance were significant predictors ($P < 0.01$), indicating that girls and students with lower academic achievement reported higher internalizing symptoms. School type was also positively related, whereas school level was not significant ($P = 0.36$). Similarly, the model predicting externalizing problems was significant ($P < 0.01$), explaining 4.9% of the variance. Female gender, higher academic performance, and higher school level were associated with lower externalizing problems, while school type showed a small positive association. Overall, these findings highlight the advantage of regression analysis in identifying the simultaneous effects of multiple demographic factors on adolescent psychological

difficulties, beyond what simple correlations or group comparisons can reveal.

Discussion

This study examined the prevalence of internalizing and externalizing problems in adolescents and their related factors. The results indicated that 36.7% of participants had internalizing problems and 15% had externalizing problems. These rates are higher than some international reports (e.g., 17.3% and 8.2% respectively (3); 15.6% and 14.8% respectively (27)), but comparable to other findings reporting 40% internalizing problems (20). In Iran, lower rates have been observed (7.4% internalizing, 7.1% externalizing) (31). These differences may reflect variations in measurement tools, sample characteristics, and cultural or social contexts. Adolescents' internalizing and externalizing problems can be influenced by multiple socio-cultural factors, including low parental education and unemployment that undermine family functioning (20), low socioeconomic status such as poverty and poor education opportunities (3), parenting practices such as low mindful parenting which reduce emotional regulation capacities (12), and family as well as school conflicts that heighten emotional reactivity and stress (6). Moreover, the prevalence of psychological problems appears to be increasing in Iran, both in the general population (37) and specifically among adolescents (28), likely due to prolonged social and economic stressors such as ineffective governmental policies, international sanctions, high inflation, and unemployment, which reduce household resources and access to services (37, 38). It should be noted that these outcomes are influenced by a multitude of complex and interacting factors, only some of which could be addressed in this study or in similar research. These findings highlight the importance of considering socio-cultural determinants in both understanding the prevalence of adolescent psychological problems and in designing contextually appropriate interventions.

Additionally, overall, 16% of adolescents had psychological problems, which exceeds the 9.7% reported elsewhere (3). A significant positive association was found between internalizing and externalizing problems, consistent with previous research (16), suggesting that externalizing problems can predict internalizing problems and that the severity of both may increase concurrently in some cases. This comorbidity may be explained by shared central symptoms, such as low self-esteem and worry, which act as bridges between the two domains (13).

Given that multiple demographic and contextual factors are simultaneously involved, linear regression analyses were conducted to examine the effects of gender, school type, academic performance, and grade level on internalizing and externalizing problems. The results indicated that girls reported higher internalizing and externalizing problems compared to boys, although the gender difference was statistically significant only for internalizing problems. This finding is consistent with studies reporting higher internalizing and externalizing scores in girls (18, 20), although some research found greater externalizing problems in boys (19, 24). At the subscale level, girls had more emotional problems, while boys had more conduct problems (20, 30). The higher prevalence of hyperactivity in girls observed here contrasts with previous findings. These gender differences may be partly explained by biological factors, such as pubertal hormonal fluctuations that increase emotional sensitivity in girls (39), and socio-cultural influences, including role expectations, gendered differences in stress perception, which predispose girls to internalizing behaviors and boys to externalizing behaviors (40, 41).

School-related factors, including school type and academic performance, influenced internalizing and externalizing problems. Students in public schools and those with lower academic performance were more vulnerable, while school level affected only externalizing problems. Regression analyses in the present study further supported these findings, showing that lower academic performance significantly predicted both internalizing and externalizing problems, while higher school level was only associated with fewer externalizing symptoms. Although chi-square analyses did not show significant differences in externalizing problems by school type, regression analyses indicated that school type significantly predicted both internalizing and externalizing problems, emphasizing the importance of multivariate analyses in capturing the complex influence of educational context on adolescent psychological outcomes. A significant negative association was found between problem scores and academic performance, such that higher problem scores were linked to poorer academic performance. This partially contrasts with previous studies reporting a negative association only for internalizing problems (18), whereas other research found that externalizing problems affected academic performance, but internalizing problems did not. The bidirectional relationship may be explained by the academic incompetence model, in which poor achievement predicts later behavioral difficulties, and the adjustment erosion model, where early psychological problems undermine school adjustment and academic performance (42). Additionally, the higher prevalence of internalizing problems among public school students contrasts with earlier findings reporting more depression in gifted schools (23), highlighting the role of school-related factors in adolescents' psychological problems. Given that adolescent psychological problems are influenced by multiple and complex factors, the present study focused specifically on demographic variables related to the educational context, including gender, school type, academic performance, and grade level. These findings indicate that while educational and gender-related

factors contribute to adolescent psychological outcomes, other unexamined influences likely play a substantial role and warrant further investigation.

Limitation

Key limitations of this research include: First, the statistical population consisted of 1,152 students from a specific city in Iran. Although the sample size is relatively adequate, conducting the study in only one city limits the generalizability of the results to other regions of the country, as social, cultural, and educational conditions may differ across other cities and provinces. Second, given the study's cross-sectional approach, causal links and longitudinal trends cannot be determined. Third, the exclusive use of self-report methods has limitations, and employing other assessment methods such as clinical interviews or reports from parents and teachers could provide a more comprehensive and accurate picture of adolescents' psychological status. Hence, the prevalence rates of internalizing and externalizing problems should be interpreted with caution.

Conclusion

This study highlighted that internalizing problems are more common than externalizing ones among adolescents. The findings emphasize the importance of identifying high-risk groups and developing targeted mental health screening and intervention programs. Focusing on adolescents with elevated emotional, behavioral, or peer-related difficulties can help ensure that psychological services and educational support are more effective in preventing and addressing mental health issues during this critical developmental period.

Given the limitations of the present study, it is recommended that future research should incorporate larger and more heterogeneous samples from various regions across the country to enhance the applicability of the results. Additionally, the use of localized cutoff points and a more comprehensive assessment of demographic and environmental factors can contribute to a more accurate understanding of adolescents' psychological problems. Finally, designing and implementing educational programs and psychological interventions based on these findings, with the participation of schools, parents, and mental health professionals, can play an effective role in preventing and reducing psychological problems among adolescents.

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Conflict of Interest

None.

Author's Contributions

This article is derived from the first author's thesis. The first author contributed to the study design, data collection, analysis, and manuscript drafting. The second, third, and fourth authors contributed to the supervision of the study, data interpretation, and critical revision of the manuscript. All authors read and approved the final version of the manuscript.

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