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Peer Bullying, Self-Esteem, and Self-Care Agency Among High School Students in Türkiye: A Cross-Sectional Study

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Abstract

This study aimed to examine the relationships between peer bullying, self-esteem, and self-care agency among high school students in Türkiye. This study was designed as a descriptive, cross-sectional study and was conducted between March 1, 2025, and May 31, 2025, in a public high school in Istanbul. The study population consisted of 2,140 students, and the sample included 350 students selected using a stratified sampling method. Data were collected using a Personal Information Form, the Peer Bullying Identification Scale (PBIS), the Self-Care Agency Scale (SCAS), and the Rosenberg Self-Esteem Scale (RSES). The mean scores were 6.77±2.72 for RSES, 76.00±19.02 for SCAS, 61.20±20.76 for PBIS–Victim, and 55.37±19.48 for PBIS–Perpetrator. A significant positive correlation was found between self-esteem and self-care agency ($r=0.613$, $p<0.01$). Self-esteem was negatively correlated with all victimization subdimensions and total PBIS–Victim scores ($r=-0.601$ to -0.792, $p<0.01$), as well as with some perpetration dimensions ($p<0.05$). Similarly, self-care agency showed significant negative correlations with both victimization and perpetration scores ($p<0.05$). A positive correlation was observed between victimization and perpetration scores ($r=0.708$, $p<0.01$). The findings indicate that higher levels of peer bullying are associated with lower self-esteem and self-care agency among adolescents, while higher self-esteem is associated with stronger self-care capacity. These results suggest that school-based interventions should focus not only on reducing bullying but also on strengthening self-esteem and improving self-care skills to promote adolescent mental health.

Introduction

Adolescence is a critical developmental period characterized by profound biological, cognitive, and social changes, during which an individual's self-concept, interpersonal relationships, and health behaviors are reshaped. In this period, the school environment emerges as a key determinant not only of academic development but also of psychosocial well-being. However, one of the major challenges within school settings is peer bullying, which is recognized as a significant public health and child and adolescent mental health problem due to its adverse effects on adolescents' psychological, social, and behavioral adjustment. Globally, more than 150 million students are exposed to peer bullying. In OECD countries, approximately 8% of students report frequent exposure to bullying, while this rate exceeds 30% in some countries. According to data from the Turkish Statistical Institute (TÜİK) and PISA 2022, approximately 11–14% of children aged 6–17 in Türkiye experience bullying at least several times a month. Furthermore, PISA 2022 reports that 25% of girls and 28% of boys in Türkiye are victims of bullying (Cosma et al., 2024; TUIK, 2024; Çoşkun, 2024). Recent reviews define peer bullying as a pattern of repeated harmful behavior characterized by intentionality and an imbalance of power, manifesting in physical, verbal, relational, and cyber forms. Moreover, exposure to peer bullying has been consistently associated with depressive symptoms, anxiety, self-harm behaviors, and overall psychological maladjustment (Han et al., 2024; Sun et al., 2025; Ajibewa et al., 2025; Özcan et al., 2025; Bhatia, 2023; Runions et al., 2025; Ye et al., 2023).

Self-esteem is one of the key variables in understanding the impact of peer bullying on adolescents. The development of self-esteem begins at birth and evolves across developmental stages. Self-esteem reflects an individual's overall evaluation of their self-worth and plays a protective role during adolescence in terms of psychological resilience, social adjustment, and behavioral regulation. With the onset of adolescence, individuals undergo a process of self-reevaluation. Positive self-esteem tends to develop among adolescents who are satisfied with their appearance, accepted by peers, and appreciated by their social environment, whereas negative self-esteem is more likely to emerge in those lacking these conditions. Recent studies indicate that bullying victimization is associated with low self-esteem, and that self-esteem may function as a significant mediating mechanism explaining the adverse mental health outcomes of bullying. For instance, a study conducted with adolescents reported that self-esteem played a significant mediating role in the relationship between bullying victimization and self-harm behaviors. Similarly, recent systematic reviews emphasize that high self-esteem serves as a protective factor against risky behaviors during adolescence (Guo et al., 2024; Martínez-Casanova et al., 2024; Lu et al., 2025; Tonkaz et al., 2025; Sır & Lok, 2024; Tsaousis, 2016; Van der Aar et al., 2022).

Peer bullying encountered by adolescents in the school environment is a multidimensional risk factor that can negatively affect not only self-esteem but also an individual's self-care agency and health responsibility. In this context, self-care agency emerges as an important concept that explains adolescents' capacity to maintain and promote their health in the face of challenging life events. Self-care agency refers to an individual's capacity to initiate and sustain behaviors necessary to maintain, protect, and improve their health. During adolescence, self-care is conceptualized as a multidimensional construct that encompasses not only physical health practices but also coping with stress, emotional regulation, help-seeking behaviors, the development of healthy lifestyle habits, and avoidance of risk-taking behaviors. The self-care theory, first developed by Dorothea Orem, is grounded in the individual's ability to assume responsibility for their own health. Current literature indicates that the concepts of self-care, self-management, and self-help are gaining increasing importance, particularly in the management of emotional problems among adolescents; however, this field remains open to further theoretical and methodological development. In addition, studies examining the relationships between health-promoting behaviors, self-esteem, and roles in school violence indicate that adolescents who are not exposed to school violence have higher levels of self-esteem and more positive health behaviors. Moreover, longitudinal studies on cyberbullying and psychosocial adjustment indicate that experiences of bullying may have long-term negative effects on self-regulation skills and self-care behaviors. These findings make the investigation of the relationship between peer bullying and self-care agency theoretically meaningful (Town et al., 2024; González Moreno et al., 2023; WHO, 2022; UNICEF, 2023; Lu et al., 2025).

Although the number of studies examining the relationship between peer bullying and self-esteem has increased in the literature, no study has been found that addresses peer bullying, self-esteem, and self-care agency together within the same model. However, it is thought that negative peer experiences encountered in the school environment may impair adolescents' self-perception and indirectly affect their self-care behaviors and health responsibility. Moreover, recent intervention studies indicate that programs aimed at enhancing self-esteem can reduce bullying victimization, while school-based multicomponent interventions may also be effective in decreasing bullying levels and associated mental health risks. Therefore, examining the relationship between peer bullying, self-esteem, and self-care agency among high school students may fill an important gap in the literature in terms of both preventive mental health services and school-based nursing/psychosocial interventions (Sır &Lok, 2024; Arango et al, 2024).

Accordingly, the aim of this study is to examine the relationships between peer bullying, self-esteem, and self-care agency among high school students in Türkiye. In addition, by being conducted with a sample of Turkish high school students, the study provides important data specific to the cultural context. The research aims to determine the levels of these variables and to reveal the relationships among them. Within this framework, it is hypothesized that peer bullying is negatively associated with self-esteem and self-care agency, while self-esteem is positively associated with self-care agency. The findings obtained offer important practical implications by suggesting that school-based intervention programs should focus not only on reducing bullying but also on strengthening self-esteem and enhancing self-care skills.

Methods

Type of the Study

This study was designed as a descriptive, cross-sectional study and was conducted between March 1, 2025, and May 31, 2025, in a public high school in Istanbul.

Sample

The population of the study consisted of a total of 2,140 students enrolled in the high school, including 597 students in the 9th grade, 489 in the 10th grade, 526 in the 11th grade, and 527 in the 12th grade. The sample size was calculated as 350 students using the formula for determining sample size in a known population. Students who agreed to participate in the study were selected using a stratified sampling method.

$$n = Nz\,2p(1 - p)\,/d\,2(N - 1) + z\,2p(1 - p)$$

n = 2140(1,96)20,50(1 − 0,50)/ 0,052(1632 − 1) + (1,96)20,50(1 − 0,50) = 350,1563 ≅ 350

Measures

During the implementation phase of the study, the necessary information was provided to the school administration and teachers, and the required permissions were obtained. Written and verbal informed consent was obtained from both students and their parents. Prior to data collection, students were informed verbally during class, and the questionnaires were administered on a voluntary basis. The data were then gathered using a Personal Information Form, the Peer Bullying Identification Scale (Adolescent Form), the Self-Care Agency Scale (SCAS), and the Rosenberg Self-Esteem Scale.

Personal Information Form

This form consists of questions related to students' socio-demographic characteristics and their experiences with peer bullying (Han et al., 2024; Sun et al., 2025; Ajibewa et al., 2025; Özcan et al., 2025; Bhatia, 2023; Runions et al., 2025; Ye et al., 2023).

Peer Bullying Identification Scale (PBIS): The peer bullying scale used in this study was developed by Ayas and Pişkin (2015) to determine the frequency of engaging in peer bullying and being exposed to peer bullying among middle and high school students. The scale consists of two dimensions: "done to me" to identify victims of bullying and "I did it" to identify perpetrators. The scale includes 53 items and comprises six subdimensions: physical bullying (14 items), verbal bullying (32 items), exclusion (6 items), rumor spreading (5 items), damage to belongings (10 items), and sexual bullying (10 items). Developed as a 5-point Likert-type scale, the minimum possible score for each dimension is 53, while the maximum score is 165. Although there is no specific cutoff point to classify students as bullies or victims, higher scores indicate higher levels of bullying or victimization. In the present study, the Cronbach's alpha coefficient was found to be .93 for the victim dimension and .94 for the perpetrator dimension (Ayas & Pişkin, 2015).

Self-Care Agency Scale (SCAS)

The scale was developed by Kearney and Fleischer (1979) to assess individuals' ability and capacity for self-care. In Türkiye, its validity and reliability study was conducted by Nahcivan in 1993 (Nahcivan, 1994). The scale consists of 35 items and is designed as a 5-point Likert-type instrument. The minimum possible score is 35, and the maximum score is 140. Higher scores indicate a higher level of self-care agency. In the present study, the Cronbach's alpha coefficient of the scale was found to be 0.91.

Rosenberg Self-Esteem Scale (RSES)

RSES was developed by Morris Rosenberg in 1965. Turkish validity and reliability studies were conducted by Çuhadaroğlu et al.The first ten questions of the scale were used to measure self-esteem in the study. Five of these ten questions consist of positive and five of negative statements. The statements are answered in a 4-point Likert scale format ranging from "strongly agree" to "strongly disagree". High scores are consistent with low self-esteem. In the present study, the Cronbach's alpha coefficient of the scale was found to be 0.88 (Rosenberg, 1965; Çuhadaroğlu, 1986).

Statistical Analysis

The data obtained in the study were analyzed using the free trial version of SPSS Statistics (Statistical Package for the Social Sciences) for Windows 25.0. Descriptive statistical methods, including number, percentage, mean, and standard deviation, were used to evaluate the data. The normality of the data distribution was assessed using the Kolmogorov–Smirnov test, and it was determined that the variables did not follow a normal distribution. The Mann–

Whitney U test was used to examine whether there were significant differences between two independent groups. The Kruskal–Wallis test was applied to determine whether there were significant differences among more than two independent groups, and the Bonferroni test was used for multiple comparisons. Relationships between variables were analyzed using Spearman correlation analysis. Reliability Analysis was conducted to assess the internal consistency of the scales. In this study, p values less than 0.05 were considered statistically significant.

Results

Descriptive Characteristics of Participants

Of the participants, 58.9% were female and 41.1% were male. Regarding age distribution, 32.0% were aged 17 years and above, and 29.7% were in the 15-year age group. It was determined that 44.0% of the participants' mothers had a primary school education or lower, while 34.3% of their fathers were high school graduates. The majority of participants (83.7%) belonged to nuclear families, and 72.3% described their family's economic status as "moderate." In terms of academic achievement, 44.3% of the participants reported a moderate level of success, while 41.4% reported a good level. Additionally, 77.4% stated that they had good relationships with their peers at school. Regarding exposure to bullying, 36.6% of the participants reported experiencing bullying, whereas 63.4% reported no such experience. The proportion of students who reported engaging in bullying behaviors was 14.9%. High school students most commonly defined bullying as violence, threats, and mockery (74.6%), as well as forcing someone to do something against their will (68.0%). Furthermore, 82.6% of the participants expressed a desire to receive education about bullying (Table 1).

Table 1
Sociodemographic Characteristics of High School Students (n = 350)

Variables		**Sayı**	**%**
Age	14 and under	40	11,4
	15	104	29,7
	16	94	26,9
	17and upper	112	32,0
Gender	Female	206	58,9
	male	144	41,1
Grade	9	98	28,0
	10	80	22,9
	11	86	24,6
	12	86	24,6
Parental living status	Both parents alive	345	98,6
	Mother alive	3	0,9
	Father alive	2	0,6
Mother's education level	Primary school or below	154	44,0
	Middle school graduate		
	High school graduate		
	University graduate		
Father's education level	Primary school or below	109	31,1
	Middle school graduate	96	27,4
	High school graduate	120	34,3
	University graduate	25	7,1
Family type	Nuclear family	293	83,7
	Extended family	57	16,3
Economical status	poor	12	3,4
	Moderate	253	72,3
	good	85	24,3
Academic achievement at school	Very good	24	6,9
	Good	145	41,4
	Moderate	155	44,3
	Poor	26	7,4
Peer relationships at school	Good	271	77,4
	Moderate	67	19,1
	Poor	12	3,4
Definition of bullying*	Using offensive language or displaying harmful behavior	230	65,7
	Violence, threats, and mockery	261	74,6
	Exerting pressure	230	65,7
	Forcing someone to do something against their will	238	68,0
Include information about bullying.	Family	108	30,9
	Friends	44	12,6
	School	133	38,0
* Multiple response			

Variables		Sayı	%
	Social media	65	18,6
Being bullied	Yes	128	36,6
	No	222	63,4
Don't think you're bullying	Yes	52	14,9
	No	298	85,1
The desire to receive information and training about bullying.	Yes	289	82,6
	No	61	17,4
* Multiple response			

Scale Score Averages

The mean score of the Rosenberg Self-Esteem Scale (RSES) was 6.77 ± 2.72, the mean score of the Self-Care Agency Scale (SCAS) was 76.00 ± 19.02, the mean score of the Peer Bullying Identification Scale (PBIS)–Victim subscale was 61.20 ± 20.76, and the mean score of the PBIS–Perpetrator subscale was 55.37 ± 19.48 (Table 2).

Table 2
Mean Scores of the Scales (n = 350)

Değişkenler	Min	Max	Medyan	$\overline{x}$	SS
Rosenberg Self-Esteem Scale (RSES)	0,00	10,00	7,00	6,77	2,72
Self-Care Agency Scale (SCAS)	0,00	122,00	78,00	76,00	19,02
Peer Bullying Identification Scale (PBIS) (Victim)	43,00	168,00	53,50	61,20	20,76
Physical Bullying (Victim)	15,00	73,00	20,00	22,94	9,16
Verbal Bullying (Victim)	7,00	33,00	10,00	11,72	5,55
Isolation (Victim)	6,00	27,00	6,00	8,40	4,25
Rumor Spreading (Victim)	5,00	25,00	5,00	6,45	2,96
Damage to Belongings (Victim)	10,00	50,00	10,00	11,69	4,00
Peer Bullying Identification Scale (PBIS) (Perpetrator)	43,00	215,00	48,00	55,37	19,48
Physical Bullying (Perpetrator)	15,00	75,00	17,00	21,38	9,39
Verbal Bullying (Perpetrator)	7,00	35,00	8,00	10,20	4,90
Isolation (Perpetrator)	6,00	30,00	6,00	7,09	2,70
Rumor Spreading (Perpetrator)	5,00	25,00	5,00	5,49	2,13
Damage to Belongings (Perpetrator)	10,00	50,00	10,00	11,21	3,95

Comparison of Rosenberg Self-Esteem Scale (RSES) Scores by Participant Characteristics

It was found that male students [9 (1–10)], those whose mothers had a primary school education or lower [9 (1–10)], those whose fathers had a primary school education or lower [8 (1–10)], those with poor economic status [8 (2–9)], those with low academic achievement [9 (0–10)], those who had poor relationships with their school peers [8 (0–7)], and those who were exposed to bullying [8 (0–10)] had significantly higher Rosenberg Self-Esteem Scale scores compared to other groups ($p < 0.05$) (Table 3).

Comparison of Self-Care Agency Scale (SCAS) Scores by Participant Characteristics

It was found that female students [97 (23–112)], those whose mothers were university graduates [95 (0–108)], those with good economic status [94 (29–122)], those with very good academic achievement [96.5 (24–122)], those who had good relationships with their school peers [90 (0–122)], and those who were not exposed to bullying [90 (0–122)] had significantly higher Self-Care Agency Scale scores compared to other groups ($p < 0.05$) (Table 3).

Comparison of Peer Bullying Identification Scale (PBIS) – Victim Scores by Participant Characteristics

It was found that male students [73 (43–156)], those with poor academic achievement [93.5 (43–168)], those with poor peer relationships [96 (43–168)], those who obtained information about bullying from friends [90 (43–123)], those who were exposed to bullying [83 (43–168)], those who did not perceive themselves as bullies [103 (43–168)], and those who wanted to receive education about bullying [91 (43–168)] had significantly higher PBIS–Victim scores compared to other groups ($p < 0.05$). Additionally, male students [32 (15–67)], those with poor academic achievement [44 (15–73)], those who were exposed to bullying [43 (15–73)], those who did not perceive themselves as bullies [33.5 (15–67)], and those who wanted to receive education about bullying [42 (15–73)] had significantly higher scores for exposure to physical bullying compared to other groups ($p < 0.05$).

It was found that female students [19 (7–33)], those with poor academic achievement [24 (7–33)], those with poor peer relationships [27.5 (7–33)], and those who were exposed to bullying [24 (7–33)] had significantly higher verbal bullying victimization scores compared to other groups ($p < 0.05$). Additionally, female students [15 (6–27)], those whose mothers had a primary school education [17 (6–27)], those with poor peer relationships [18 (6–27)], those who were exposed to bullying [15 (6–27)], and those who wanted to receive education about bullying [17 (6–27)] had significantly higher scores for exposure to isolation compared to other groups ($p < 0.05$). It was also found that those who were exposed to bullying [12 (5–25)] and those who did not perceive themselves as bullies [13 (5–24)] had significantly higher rumor-spreading victim scores compared to other groups ($p < 0.05$). Furthermore, those with poor academic achievement [18 (10–29)], those who were exposed to bullying [20 (10–50)], and those who did not perceive themselves as bullies [18 (10–32)] had significantly higher victim scores related to damage to belongings compared to other groups ($p < 0.05$) (Table 3).

Comparison of PBIS–Perpetrator Scores by Participant Characteristics

It was found that students aged 17 years and above [83 (43–215)], male students [112 (43–215)], those whose fathers had a primary school education [75 (43–149)], those with poor economic status [14 (10–17)], those with poor academic achievement [72 (43–116)], those who were exposed to bullying [81 (43–131)], and those who perceived themselves as bullies [97.5 (43–215)] had significantly higher PBIS–Perpetrator scores compared to other groups ($p < 0.05$). Similarly, students aged 17 years and above, male students, those who perceived themselves as bullies, and those who were exposed to bullying had significantly higher scores in physical, verbal, isolation, rumor spreading, and damage to belongings subdimensions compared to other groups ($p < 0.05$) (Table 3).

Correlation Analysis Results for the Rosenberg Self-Esteem Scale (RSES)

A statistically significant and positive correlation was found between the Rosenberg Self-Esteem Scale (RSES) and the Self-Care Agency Scale (SCAS) ($r = 0.613$, $p < 0.01$). Significant and negative correlations were identified between RSES and physical bullying (victim) ($r = -0.681$, $p < 0.01$), verbal bullying (victim) ($r = -0.690$, $p < 0.01$), isolation (victim) ($r = -0.663$, $p < 0.01$), rumor spreading (victim) ($r = -0.733$, $p < 0.01$), and damage to belongings (victim) ($r = -0.601$, $p < 0.01$). Additionally, a statistically significant and negative correlation was found between RSES and the total score of the Peer Bullying Identification Scale (PBIS)–Victim ($r = -0.792$, $p < 0.01$). Furthermore, significant negative correlations were observed between RSES and verbal bullying (perpetrator) ($r = -0.735$, $p < 0.05$), isolation (perpetrator) ($r = -0.642$, $p < 0.01$), and the total PBIS–Perpetrator score ($r = -0.721$, $p < 0.05$) ($p < 0.05$) (Table 4).

Correlation Analysis Results for the Self-Care Agency Scale (SCAS)

A statistically significant and negative correlation was found between the Self-Care Agency Scale (SCAS) and physical bullying (victim) ($r = -0.604$, $p < 0.01$), verbal bullying (victim) ($r = -0.608$, $p < 0.01$), isolation (victim) ($r = -0.691$, $p < 0.01$), rumor spreading (victim) ($r = -0.660$, $p < 0.01$), and damage to belongings (victim) ($r = -0.636$, $p < 0.05$). In addition, a statistically significant and negative correlation was identified between SCAS and the total score of the Peer Bullying Identification Scale (PBIS)–Victim ($r = -0.736$, $p < 0.01$). Furthermore, significant negative correlations were found between SCAS and physical bullying (perpetrator) ($r = -0.570$, $p < 0.01$), verbal bullying (perpetrator) ($r = -0.667$, $p < 0.01$), isolation (perpetrator) ($r = -0.525$, $p < 0.05$), and the total PBIS–Perpetrator score ($r = -0.708$, $p < 0.01$) (Table 4).

Correlation Analysis Results for the Peer Bullying Identification Scale (PBIS)

A statistically significant and positive correlation was found between the total PBIS–Victim score and physical bullying (perpetrator) ($r = 0.771$, $p < 0.01$), verbal bullying (perpetrator) ($r = 0.849$, $p < 0.01$), isolation (perpetrator) ($r = 0.313$, $p < 0.01$), rumor spreading (perpetrator) ($r = 0.737$, $p < 0.01$), and damage to belongings (perpetrator) ($r = 0.565$, $p < 0.01$). Additionally, a statistically significant and positive correlation was identified between the total PBIS–Victim score and the total PBIS–Perpetrator score ($r = 0.708$, $p < 0.01$) (Table 4).

Table 4
Correlation Analysis Results of the Scales and Their Subdimensions

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Rosenberg Self-Esteem Scale (RSES)	1													
2. Self-Care Agency Scale (SCAS)	0,613**	1												
3. Physical Bullying (Victim)	-0,681**	-0,604**	1											
4. Verbal Bullying (Victim)	-0,690**	-0,608**	0,709**	1										
5. Isolation (Victim)	-0,663**	-0,691**	0,438**	0,502**	1									
6. Rumor Spreading (Victim)	-0,733**	-0,660**	0,470**	0,563**	0,520**	1								
7. Damage to Belongings (Victim)	-0,601**	-0,636*	0,485**	0,545**	0,435**	0,521**	1							
8. Peer Bullying Identification Scale (PBIS) (Victim)	-0,792**	-0,736**	0,911**	0,871**	0,636**	0,647**	0,624**	1						
9. Physical Bullying (Perpetrator)	-0,056	-0,570**	0,677**	0,463**	0,131*	0,265**	0,319**	0,771**	1					
10. Verbal Bullying (Perpetrator)	-0,735*	-0,667**	0,710**	0,583**	0,211**	0,379**	0,409**	0,849**	0,709**	1				
11. Isolation (Perpetrator)	-0,642**	-0,525*	0,269**	0,256**	0,344**	0,324**	0,290**	0,313**	0,420**	0,459**	1			
12. Rumor Spreading (Perpetrator)	-0,039	-0,557	0,214**	0,218**	0,138**	0,351**	0,243**	0,737**	0,542**	0,784**	0,376**	1		
13. Damage to Belongings (Perpetrator)	-0,066	-0,767	0,334**	0,318**	0,203**	0,282**	0,526**	0,565**	0,502**	0,584**	0,442**	0,455**	1	
14. Peer Bullying Identification Scale (PBIS) (Perpetrator)	-0,721*	-0,708**	0,651**	0,520**	0,218**	0,344**	0,403**	0,708**	0,932**	0,840**	0,567**	0,720**	0,579**	1

*p < 0,05; **p < 0,01; Spearman korelasyon

Table 3
Distribution of RSES, SCAS, PBIS (Victim) and PBIS (Perpetrator) scores according to some variables.

Variables		RSES	SCAS	PBIS (Victim)	Physical Bullying	Verbal Bullying	Isolation	Rumor Spreading	Damage to Belongings	PBIS (Perpetrator)	Physical Bullying
		Medyan (min-maks)	Medyan (min-maks)	Medyan (min-maks)	Medyan (min-maks)	Medyan (min-maks)	Medyan (min-maks)	Medyan (min-maks)	Medyan (min-maks)	Medyan (min-maks)	Medyan (min-maks)
Age	14 and under (1)	7 (3–10)	77 (44–110)	51 (43–156)	20 (15–44)	9,5 (7–29)	6 (6–27)	5 (5–25)	10 (10–50)	45 (43–70)	16 (15–33)
	15 (2)	8 (1–10)	78,5 (0-112)	52 (43–168)	19 (15–73)	9 (7–33)	6 (6–27)	5 (5–17)	10 (10–26)	46 (43–101)	16 (15–47)
	16 (3)	7 (0–10)	74,5 (23–122)	56,5 (43–123)	21 (15–67)	10 (7–28)	6,5 (6–24)	5 (5–15)	10 (10–26)	48 (43–149)	18 (15–69)
	17 and upper (4)	7 (0–10)	78,5 (36–107)	57 (43–142)	20 (15–53)	11 (7–31)	6 (6–27)	5 (5–24)	10 (10–34)	83 (43–215)	40 (15–75)
	KW	1,880	2,853	4,633	2,145	5,033	3,523	3,863	7,716	**20,586**	**14,591**
	p	0,598	0,415	0,201	0,543	0,169	0,318	0,277	0,052	**0,000***	**0,002***
	Bonferroni									**1,2 < 4**	**1,2 < 4**
Gender	Female (1)	7 (0–10)	97 (23–112)	58 (43–168)	19 (15–73)	19 (7–33)	15 (6–27)	5 (5–25)	10 (10–32)	46 (43–101)	16 (15–45)
	Male (2)	9 (1–10)	78 (0-122)	73 (43–156)	32 (15–67)	10 (7–28)	6 (6–24)	5 (5–24)	10 (10–50)	112 (43–215)	50 (15–75)
	z	**-2,862**	**-3,436**	**-3,368**	**-4,711**	**-4,038**	**-3,498**	-0,466	-0,959	**-3,902**	**-4,166**
	p	**0,004***	**0,012***	**0,013***	**0,047***	**0,020***	**0,000***	0,641	0,337	**0,000***	**0,001***
	Bonferroni	**1 < 2**	**2 < 1**	**1 < 2**	**1 < 2**	**2 < 1**	**2 < 1**			**1 < 2**	**1 < 2**
Mother's educational status	Primary school and below (1)	9 (0–10)	77 (25–107)	57 (43–168)	21 (15–73)	11 (7–33)	17 (6–27)	5 (5–23)	10 (10–50)	48 (43–131)	17 (15–58)
	Middle school graduate (2)	8 (0–10)	77 (24–122)	53 (43–136)	20 (15–47)	9 (7–29)	11 (6–23)	5 (5–25)	10 (10–26)	48 (43–215)	17 (15–75)
	High school graduate (3)	7 (2–10)	85 (29–112)	52 (43–130)	20 (15–57)	10 (7–26)	6 (6–24)	5 (5–24)	10 (10–34)	50 (43–149)	18 (15–69)
	University graduate (4)	7 (0–10)	95 (0-108)	52 (43–142)	19 (15–53)	9,5 (7–19)	7 (6–20)	5 (5–19)	10 (10–32)	46 (43–101)	15 (15–37)
	KW	**3,099**	**4,090**	4,878	2,036	7,153	**9,736**	3,371	4,794	2,137	2,507
	p	**0,037***	**0,022***	0,181	0,565	0,067	**0,021***	0,338	0,187	0,545	0,474
	Bonferroni	**3,4 < 2<1**	**1,2 < 3<4**				**3 < 1**				
Father's educational status	Primary school and below (1)	8 (0–10)	80 (25–112)	53 (43–168)	19 (15–73)	9 (7–33)	6 (6–27)	5 (5–23)	10 (10–50)	75 (43–149)	17 (15–69)
	Middle school graduate (2)	7 (0–10)	76 (24–122)	54 (43–136)	20 (15–47)	10 (7–29)	6 (6–23)	5 (5–25)	10 (10–26)	49 (43–215)	18 (15–75)
	High school graduate (3)	6 (0–10)	77 (23–108)	53 (43–130)	21 (15–57)	10 (7–28)	6 (6–27)	5 (5–24)	10 (10–34)	48 (43–131)	18 (15–56)

*p < 0,05;z: Mann Whitney U; KW:Kruskal Wallis

	University graduate (4)	6 (1–10)	81 (0-108)	54 (43–142)	20 (15–53)	12 (7–22)	6 (6–19)	5 (5–19)	10 (10–32)	49 (43–92)	15 (15–49)
	KW	**3,611**	0,465	0,125	-0,907	-0,434	-0,387	-0,773	-0,506	**-3,071**	-0,149
	p	**0,046***	0,926	0,989	0,364	0,664	0,698	0,439	0,613	**0,043**	0,881
	Bonferroni	**3,4 < 2<1**								**3 < 1**	
Family economic situation	Poor (1)	8 (2–9)	78,5 (55–112)	64,5 (43–114)	23 (15–47)	11,5 (7–26)	7,5 (6–21)	6 (5–12)	14 (10–17)	46,5 (43–126)	36 (15–53)
	Moderate (2)	7 (0–10)	86 (0-111)	55 (43–168)	20 (15–73)	10 (7–33)	6 (6–27)	5 (5–25)	10 (10–50)	48 (43–131)	22 (15–52)
	Good (3)	6 (1–10)	94 (29–122)	52 (43–142)	20 (15–67)	9 (7–28)	6 (6–23)	5 (5–19)	10 (10–32)	50 (43–215)	18 (15–75)
	KW	**4,126**	**7,873**	-0,539	0,976	0,656	3,327	2,206	**5,278**	1,069	**5,322**
	p	**0,027***	**0,020***	0,590	0,614	0,720	0,189	0,332	**0,020***	0,586	**0,016***
	Bonferroni	**3 < 2<1**	**1 < 2<3**						**2,3 < 1**		**2,3 < 1**
Academic performance at school	Very good (1)	6 (2–10)	96,5 (24–122)	53 (43–117)	21 (15–67)	9 (7–26)	6 (6–21)	5 (5–9)	10 (10–17)	48 (43–215)	15,5 (15–75)
	Good (2)	7 (0–10)	80 (30–109)	65 (43–130)	19 (15–50)	9 (7–28)	6 (6–27)	5 (5–24)	10 (10–34)	46 (43–155)	17 (15–63)
	Moderate (3)	8 (0–10)	76 (0-111)	73 (43–156)	21 (15–57)	10 (7–31)	6 (6–24)	5 (5–25)	11 (10–50)	50 (43–149)	18 (15–69)
	Poor (4)	9 (0–10)	71,5 (23–107)	93,5 (43–168)	44 (15–73)	24 (7–33)	8,5 (6–27)	5,5 (5–15)	18 (10–29)	72 (43–116)	19,5 (15–52)
	KW	**37,879**	**20,773**	**11,718**	**11,016**	**8,365**	7,592	7,430	**8,414**	**8,829**	4,329
	p	**0,000***	**0,000***	**0,008***	**0,012***	**0,039***	0,055	0,059	**0,038***	**0,020***	0,228
	Bonferroni	**1,2 < 3<4**	**3,4 < 1,2**	**2 < 4**	**2 < 4**	**2 < 4**			**1 < 4**	**1 < 4**	
Relationship status with friends at school	Good (1)	4 (0–10)	90 (0-122)	53 (43–156)	19 (15–67)	9 (7–31)	6 (6–21)	5 (5–24)	10 (10–50)	49 (43–215)	18 (15–75)
	Moderate (2)	5 (0–10)	68 (25–103)	79 (43–142)	21 (15–53)	12 (7–29)	8 (6–27)	5 (5–25)	10 (10–32)	47 (43–93)	17 (15–43)
	Poor (3)	8 (0–7)	62 (23–103)	96 (43–168)	23 (15–73)	27,5 (7–33)	18 (6–27)	8 (5–19)	10,5 (10–26)	48 (43–149)	17 (15–69)
	KW	**50,219**	**17,941**	**15,410**	3,950	**13,510**	**39,279**	**17,512**	4,104	0,919	1,269
	p	**0,000***	**0,000***	**0,000***	0,139	**0,001***	**0,000***	**0,000***	0,128	0,632	0,530
	Bonferroni	**1 < 2<3**	**2,3 < 1**	**1 < 2,3**		**1 < 2,3**	**1 < 2,3**	**1 < 2,3**			
Include information about bullying.	Family (1)	8 (1–10)	77 (35–112)	53 (43–130)	20 (15–50)	9 (7–27)	6 (6–24)	5 (5–24)	10 (10–34)	49 (43–131)	17,5 (15–53)
	Friends (2)	7 (0–10)	78,5 (26–122)	90 (43–123)	22 (15–67)	12 (7–31)	7,5 (6–27)	6 (5–19)	10 (10–25)	53 (43–215)	20 (15–75)
	School (3)	7 (0–10)	77 (0-111)	63 (43–168)	19 (15–73)	10 (7–33)	6 (6–27)	5 (5–25)	10 (10–26)	47 (43–155)	17 (15–69)
	Social media (4)	7 (0–10)	78 (23–107)	76 (43–156)	21 (15–57)	10 (7–25)	7 (6–20)	5 (5–23)	10 (10–50)	48 (43–114)	18 (15–56)
	KW	3,339	0,576	**9,476**	3,423	3,893	13,510	7,275	3,378	4,976	4,580
	p	0,342	0,902	**0,048***	0,331	0,273	0,004*	0,064	0,337	0,174	0,205
	Bonferroni			**4 < 2**			1 < 2,4				
Being bullied	Yes (1)	8 (0–10)	73 (25–107)	83 (43–168)	43 (15–73)	24 (7–33)	15 (6–27)	12 (5–25)	20 (10–50)	81 (43–131)	30 (15–58)

*p < 0,05;z: Mann Whitney U; KW:Kruskal Wallis

	No (2)	6 (0–10)	90 (0-122)	50 (43–116)	18,5 (15–57)	8 (7–27)	6 (6–21)	5 (5–15)	10 (10–29)	46 (43–215)	17 (15–75)
	z	**-6,218**	**-2,918**	**-7,370**	**-5,658**	**-7,217**	**-6,306**	**-5,634**	**-4,890**	**-3,296**	**-2,766**
	p	**0,000***	**0,004***	**0,000***	**0,000***	**0,000***	**0,000***	**0,000***	**0,000***	0,001*	0,006*
	Bonferroni	**2 < 1**	**1 < 2**	**2 < 1**	**2 < 1**	**1 < 2**	**1 < 2**	**2 < 1**		**2 < 1**	**2 < 1**
Don't think you're bullying	Yes (1)	7 (0–10)	71,5 (25–122)	53 (43–156)	22 (15–67)	15 (7–28)	6 (6–27)	13 (5–24)	10,5 (10–50)	97,5 (43–215)	36 (15–75)
	No (2)	7 (0–10)	78 (0-112)	103 (43–168)	33,5 (15–73)	9 (7–33)	6 (6–27)	5 (5–25)	18 (10–32)	46 (43–116)	17 (15–52)
	z	-0,142	-1,540	**-3,959**	**-3,429**	-4,404	-1,368	**-3,868**	**-3,068**	**-7,400**	**-6,893**
	p	0,887	0,124	**0,000***	**0,001***	0,000*	0,171	**0,000***	**0,002***	**0,000***	**0,000***
	Bonferroni			**1 < 2**	**2 < 1**	**2 < 1**		**2 < 1**	**1 < 2**	**2 < 1**	**2 < 1**
The desire to receive information and training about bullying.	Yes (1)	6 (0–10)	77 (24–107)	91 (43–168)	42 (15–73)	11 (7–33)	17 (6–27)	5 (5–24)	10 (10–34)	48 (43–131)	17 (15–47)
	No (2)	7 (0–10)	78 (0-122)	53 (43–156)	30 (15–67)	10 (7–31)	9 (6–27)	5 (5–25)	10 (10–50)	48 (43–215)	18 (15–75)
	z	-1,289	-0,754	**-2,681**	**-2,353**	-1,603	**-2,880**	-1,549	**-2,513**	-0,252	-0,253
	p	0,197	0,451	**0,007***	**0,019***	0,109	**0,004***	0,121	**0,012***	0,801	0,800
	Bonferroni			**2 < 1**	**2 < 1**		**2 < 1**				

*p < 0,05;z: Mann Whitney U; KW:Kruskal Wallis

Discussion

In this study, the relationships between peer bullying, self-esteem, and self-care agency among high school students were examined. The findings reveal that experiences of bullying during adolescence have significant effects on both psychosocial functioning and health-related behaviors.

The finding that 36.6% of participants reported being exposed to bullying indicates that peer bullying remains a prevalent problem. This rate is consistent with studies conducted in different countries in recent years. Indeed, recent systematic reviews report that the prevalence of bullying victimization among adolescents ranges between 20% and 40% (Ajibewa et al., 2025; Han et al., 2025; Arango et al., 2024; Cosma et al., 2024; TUIK, 2024; UNICEF, 2023; WHO, 2022). In this study, 14.9% of students reported engaging in bullying behavior, suggesting that bullying should be evaluated not only in terms of victimization but also from the perspective of perpetration. The literature indicates that individuals who engage in bullying tend to have lower levels of empathy, insufficient problem-solving skills, and poorer social adjustment (Han et al., 2025; Arango et al., 2024; Cosma et al., 2024; TUIK, 2024; UNICEF, 2023; WHO, 2022; Tonkaz et al., 2025; Sır & Lok, 2024). This finding indicates that school-based interventions should target not only victims but also students who engage in bullying behaviors. Another notable result of the study is that students most commonly defined bullying as violence, threats, and mockery (74.6%), as well as forcing someone to do something against their will (68.0%). This suggests that adolescents tend to perceive bullying primarily in terms of direct and observable behaviors. However, current literature emphasizes that relational and cyberbullying are at least as prevalent and harmful as physical forms of bullying (UNICEF, 2023; Lu et al., 2025; Cosma et al., 2024; TUIK, 2024; UNICEF, 2023; WHO, 2022; Tonkaz et al., 2025; Sır & Lok, 2024). This finding highlights the need to increase students' awareness of different types of bullying. The fact that a large majority of participants (82.6%) expressed a desire to receive education on bullying indicates a substantial need for school-based preventive programs. Indeed, recent intervention studies demonstrate that anti-bullying educational programs not only reduce bullying behaviors but also improve students' psychosocial adjustment (Sır & Lok, 2024; Tsaousis, 2016; Özcan et al., 2024; Martínez-Casanova et al., 2024). In this context, the present findings support the necessity of education-based interventions. In the study, most students reported moderate or good academic achievement (44.3% moderate, 41.4% good), and a large proportion evaluated their peer relationships as good (77.4%). These results suggest that bullying may not always co-occur with low social adjustment. However, the literature indicates that bullying experiences can have long-term negative effects on academic performance and school engagement (Ajibewa et al., 2025; Han et al., 2025; Arango et al., 2024; Cosma et al., 2024; TUIK, 2024; UNICEF, 2023; WHO, 2022; Sır & Lok, 2024; Tsaousis, 2016; Özcan et al., 2024). Therefore, the present findings draw attention to the potential long-term consequences of bullying, which may not be immediately apparent in the short term.

In this study, the mean scores of high school students were 6.77 ± 2.72 for the Rosenberg Self-Esteem Scale (RSES), 76.00 ± 19.02 for the Self-Care Agency Scale (SCAS), 61.20 ± 20.76 for the Peer Bullying Identification Scale (PBIS)–Victim, and 55.37 ± 19.48 for the PBIS–Perpetrator. When these findings are considered together, it can be suggested that peer bullying in this sample reflects not merely a one-dimensional school problem but rather a multidimensional psychosocial construct associated with self-evaluation and self-care capacity. In particular, the higher mean victimization score compared to the perpetration score may indicate that experiences of victimization are more prominent than perpetration behaviors in this sample. However, since these scales have been used across different samples and with varying scoring approaches, it appears more appropriate to interpret the findings within the context of trends reported in the literature rather than making strict categorical judgments such as "high" or "low."

In this study, the mean Rosenberg Self-Esteem Scale (RSES) score of 6.77 ± 2.72 suggests that students generally have a moderate level of self-esteem. During adolescence, self-esteem is not only a variable reflecting an individual's self-perception but also a psychosocial resource that plays a protective role against risk behaviors.

The literature indicates that self-esteem in adolescents is typically at a moderate level; however, experiences of bullying may negatively affect this level (Martínez-Casanova et al., 2024; Sır & Lok, 2024; Tonkaz et al., 2025; González Moreno et al., 2023; Guo et al., 2024). A recent systematic review examining the relationships between self-esteem, bullying, and cyberbullying in adolescents also demonstrates that low self-esteem is significantly associated with both victimization and adverse psychological outcomes (Ma et al., 2024). Within this context, the fact that the mean RSES score in the present study does not indicate a uniformly high level of self-esteem suggests that peer bullying may be associated with adolescents' self-evaluations.

The mean score of the Self-Care Agency Scale (SCAS) was found to be 76.00 ± 19.02. This value indicates that students' self-care agency is at a moderate to good level. Self-care agency in adolescents is known to be closely related to individuals' capacity for health responsibility, coping with stress, and maintaining healthy lifestyle behaviors (Town et al., 2023; González Moreno et al., 2023). During adolescence, self-care is not limited to behaviors aimed at maintaining physical health; it also encompasses emotional regulation, coping with stress, help-seeking behaviors, taking responsibility for one's health, and the ability to sustain daily functioning effectively. Although no study was found in the literature directly examining peer bullying and self-care agency together, recent scoping reviews and systematic studies highlight that the concepts of self-care and self-management in adolescents are increasingly addressed within the context of emotional problems, self-regulation, and psychosocial resilience, and that this construct is inherently multidimensional. Therefore, the finding that the mean SCAS score falls within a moderate range suggests that self-care capacity in this sample is not entirely inadequate, but rather represents a structure that may be influenced by challenging school and peer experiences. This interpretation is consistent with recent studies examining the relationships between health-promoting behaviors, stress, self-esteem, and roles in school violence, which report that involvement in school violence is associated with more negative health behaviors and a more vulnerable psychosocial profile. In other words, bullying may undermine not only emotional well-being but also students' motivation and capacity to maintain their own self-care. Accordingly, the moderate level of self-care agency observed in this study may be associated with the bullying experiences present within the sample (Truscott et al., 2024; Pacífico et al., 2024; González Moreno et al., 2023; Guo et al., 2024).

The mean PBIS–Victim score of 61.20 ± 20.76 and the mean PBIS–Perpetrator score of 55.37 ± 19.48 indicate that peer bullying is a prevalent issue among adolescents in terms of both victimization and perpetration, which is consistent with recent studies (Ajibewa et al., 2025; Han et al., 2025; Arango et al., 2024; Cosma et al., 2024; TUIK, 2024; UNICEF, 2023; WHO, 2022). Considering victim and perpetrator mean scores together suggests that bullying should be conceptualized as a dynamic and role-fluid process within the school environment. Recent longitudinal findings indicate that prior victimization experiences may be positively associated with later bullying behaviors, meaning that some adolescents may exhibit both victim and perpetrator characteristics over time. Therefore, the relatively higher victim scores suggest not only passive victimization but also that the cycle of bullying may be linked to patterns of social relationships within the school environment. Moreover, meta-analytic findings indicating that cyberbullying victimization in children and adolescents has small but consistent negative effects on mental health symptoms over time highlight that victimization should not be considered a "temporary" or "insignificant" experience. In this context, the finding that victim scores were higher than perpetrator scores in this sample suggests that early identification of victimization should be prioritized in preventive interventions. (Li et al., 2025; Lee et al., 2026; Han et al., 2025; Arango et al., 2024; Cosma et al., 2024; Martínez-Casanova et al., 2024; Sır & Lok, 2024; Tonkaz et al., 2025; González Moreno et al., 2023; Guo et al., 2024). These findings also have meaningful implications within the Turkish context. Recent studies conducted in Türkiye indicate that peer bullying is associated with gender, perceived academic achievement, school type, and socioeconomic characteristics, and that both bullying and victimization scores tend to be higher among male students and in more disadvantaged contexts (Morkan Şahin & Aral, 2023; Çetin, 2025; Polat & Çetin, 2021).

Another important aspect of the findings is the need to consider self-esteem and self-care agency together. Current literature demonstrates that self-esteem serves as a protective factor against risk behaviors and plays a central role in psychological adjustment. When adolescents experience humiliation, exclusion, or threats in peer relationships, their sense of self-worth may be undermined; this, in turn, can negatively affect self-care processes such as taking responsibility for one's health, engaging in self-care behaviors, seeking help, and coping with stress. Within this theoretical framework, evaluating RSES and SCAS scores together in the present study is particularly valuable, as it suggests that bullying does not only produce mental health symptoms but may also influence students' daily health behaviors and self-regulation capacities. In particular, the demonstrated relationship between roles in school violence and indicators of healthy lifestyle behaviors contributes to making the concept of self-care agency more visible in the literature (Li et al., 2025; Lee et al., 2026; Han et al., 2025; Arango et al., 2024; Cosma et al., 2024; Martínez-Casanova et al., 2024; Sır & Lok, 2024; Tonkaz et al., 2025; González Moreno et al., 2023; Guo et al., 2024; Town et al., 2024).These findings also have important practical implications. Recent meta-analyses indicate that school-based anti-bullying interventions are effective in reducing bullying and improving mental health outcomes. Therefore, the levels of victimization and bullying observed in this sample suggest not only a need for individual counseling at the level of school guidance services, but also the necessity of comprehensive, school-wide, multicomponent prevention programs. However, an important consideration is that interventions should not focus solely on reducing bullying behaviors. They should also include components that enhance self-esteem, strengthen self-care agency, and promote help-seeking behaviors among students. Consistent with this, a moderate-to-strong, positive, and statistically significant correlation was found between the Rosenberg Self-Esteem Scale (RSES) and the Self-Care Agency Scale (SCAS) in this study ($r = 0.613$, $p < 0.01$). This positive correlation supports the theoretical expectation that as self-esteem increases, students' self-care agency also improves. This finding aligns with current evidence indicating that the psychological consequences of victimization persist over time and cannot be fully resolved solely through disciplinary measures (Fraguas et al., 2020; Lee et al., 2025; Ma et al., 2024; Martínez-Casanova et al., 2024; Sır & Lok, 2024; Tonkaz et al., 2025; González Moreno et al., 2023; Arafa et al., 2024; Li et al., 2025; Zhao et al., 2021).

One of the most striking findings of the study is the near-strong negative correlation between the RSES and the total PBIS–Victim score ($r = -0.792$), suggesting that victimization experiences may substantially erode adolescents' self-perception. In other words, decreases in self-esteem may become most evident among students in the "victim" role. This finding is also important from a practical perspective; in the context of school health, mental health nursing,

and counseling services, low self-esteem may indicate not only general psychological vulnerability but also hidden victimization. Recent systematic reviews and contemporary observational studies further suggest that the findings of this study are not merely a local pattern but are consistent with a robust trend observed in the international literature (Agustiningsih et al., 2024; Li et al., 2025; Zhao et al., 2021; Yavaş et al., 2025).

In conclusion, the correlation findings of this study point to three main issues. First, as self-esteem increases, self-care agency also increases. Second, as self-esteem decreases, bullying experiences—particularly those related to the victim role—become more pronounced. Third, low self-esteem appears to be associated with certain bullying perpetration behaviors, suggesting that bullying is not only a matter of victimization but also a multidimensional adjustment problem. Within this framework, self-esteem can be considered a central variable in understanding the relationship between peer bullying and self-care agency among high school students. The findings indicate that school-based prevention and intervention programs should address multiple components simultaneously, including strengthening self-esteem, early identification of victimization, increasing the visibility of relational bullying, and supporting self-care skills.

CONCLUSİON

Principal Findings

This study demonstrated that peer bullying is a prevalent and multidimensional issue among high school students and is significantly associated with both self-esteem and self-care agency. A strong positive relationship was identified between self-esteem and self-care agency, indicating that adolescents with higher self-esteem tend to exhibit better self-care capacities. In contrast, self-esteem showed strong and consistent negative correlations with all forms of peer victimization, particularly relational forms such as rumor spreading and social exclusion. Additionally, self-esteem was negatively associated with certain bullying perpetration behaviors, suggesting that lower self-esteem may be linked not only to victimization but also to maladaptive social behaviors.

Interpretation

The findings highlight self-esteem as a central psychosocial construct linking peer bullying experiences and health-related behaviors in adolescence. The strong negative associations between self-esteem and victimization suggest that exposure to bullying may significantly undermine adolescents' self-perception and psychological resilience. At the same time, the positive association between self-esteem and self-care agency indicates that self-esteem may function as a protective factor that supports adaptive health behaviors. These results support a multidimensional understanding of peer bullying, extending beyond psychological outcomes to include its impact on adolescents' capacity for self-care and health responsibility.

Implications for Practice

The results emphasize the need for comprehensive, school-based interventions that address not only bullying behaviors but also underlying psychosocial factors. Programs aimed at enhancing self-esteem and promoting self-care skills may be effective in reducing both victimization and perpetration. School health services, including school nurses and psychological counselors, should play an active role in identifying at-risk students and implementing preventive strategies. Increasing students' awareness of different forms of bullying, particularly relational and indirect forms, is also essential.

Strengths and Limitations

A key strength of this study is the integrated examination of peer bullying, self-esteem, and self-care agency within a single model, which remains limited in the existing literature. However, the cross-sectional design restricts causal interpretations, and the reliance on self-reported data may introduce response bias. Additionally, the findings are limited to a specific cultural and regional context, which may affect generalizability.

Future Directions

Future research should employ longitudinal and experimental designs to clarify causal relationships between peer bullying, self-esteem, and self-care agency. Further studies are also needed to examine the mediating or moderating role of self-esteem in these relationships. Expanding research across diverse populations and cultural contexts will contribute to a more comprehensive understanding of these variables. Intervention studies focusing on strengthening self-esteem and self-care skills are particularly recommended.

Declarations

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Author Contributions

Study conception/design: Aksu; Data collection: Özen; Data analysis: Aksu; Drafting of manuscript: Aksu; Critical revisions for important intellectual content: Aksu; Supervision:Aksu.

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Data availability

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

Ethics Statement

Permission for the research was obtained from the Balikesir University Ethics Committee (date: 07.01.2025; approval number: 2025/24). The study was carried out in accordance with the principles of the Declaration of Helsinki. The purpose of the study was explained to all participants, and data were collected after obtaining informed consent.

Consent for publication

Not applicable.

Consent to participate

The purpose of the study was explained to all participants, and data were collected after obtaining informed consent.

Competing interests

The authors declare no competing interests.

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