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Self-Esteem, Social Anxiety, and Affective Lability as Predictors of Academic Achievement in Pediatric Nursing Students: A Mediation Analysis

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Abstract

Objective: To assess levels of self-esteem, social anxiety, and affective lability among pediatric nursing students; to examine their associations with academic achievement; and to test whether social anxiety and affective lability mediate the self-esteem–achievement relationship.
Method: A descriptive cross-sectional study was conducted among 370 nursing students aged 17-24 years using purposive sampling. Instruments included the Coopersmith Self-Esteem Scale (self-esteem), the Liebowitz Social Anxiety Scale-Self-Report (LSAS-SR), the Affective Lability Scale (ALS-18), and academic achievement records from the pediatric nursing course. Sociodemographic variables were also collected. Data were analyzed using Pearson correlations and mediation analysis with Hayes PROCESS Model 4.
Results: Students demonstrated moderate self-esteem, mild-to-moderate social anxiety, and clinically notable affective lability (mean ALS-18 = 42.3 ± 11.7; scores > 40 indicate clinically notable emotional dysregulation). Self-esteem showed a significant positive correlation with academic achievement ($r = 0.42$, $P < 0.01$). Social anxiety ($r = -0.38$, $P < 0.01$) and affective lability ($r = -0.36$, $P < 0.01$) were each negatively correlated with both self-esteem and academic achievement. Mediation analysis revealed that social anxiety and affective lability partially mediated the relationship between self-esteem and academic achievement (indirect effect = 0.19, 95% CI: 0.08 to 0.33), accounting for 41% of the total association between self-esteem and academic achievement (proportion mediated = 0.41). No significant associations were found between sociodemographic variables and self-esteem.
Conclusion: Self-esteem is positively associated with academic achievement among pediatric nursing students. Cross-sectional mediation analysis indicates that this association is statistically consistent with a model in which social anxiety and affective lability together account for 41% of the total association. However, causal interpretation requires longitudinal replication. Psychiatric screening for emotional dysregulation and social anxiety using validated tools such as the ALS-18 and LSAS may help identify at-risk students, but experimental studies are needed to test whether interventions targeting these constructs improve academic outcomes.

Key words: *Academic Achievement; Medical Education; Nursing Student; Self-Esteem; Social Anxiety*

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The healthcare learning environment serves as a critical foundation for preparing nursing students for their professional roles. Within pediatric clinical

settings, self-esteem has been identified as an essential determinant of clinical competence (1). Research consistently demonstrates that even when students possess adequate theoretical knowledge and technical skills, hesitation to act often arises when self-esteem is lacking (2, 3). Consequently, the acquisition of self-esteem is arguably as important as the acquisition of theoretical knowledge for nursing students (4). A well-documented positive correlation exists between self-esteem and academic achievement across various educational contexts (5). However, the psychological mechanisms underlying this relationship remain poorly understood, particularly among college nursing students who are training in pediatric care, which is a clinical environment that presents unique emotional and cognitive demands, including caring for seriously ill children, communicating with distressed parents, and making rapid clinical decisions under conditions of uncertainty.

Nursing students enrolled in pediatric clinical rotations face distinct psychological challenges compared to those in adult-focused clinical settings. Pediatric nursing requires not only technical proficiency but also the ability to manage emotional contagion from suffering children and their families (6). These stressors may activate or exacerbate underlying psychological vulnerabilities, including social anxiety (defined as a persistent fear of negative evaluation and rejection in social or performance situations), and affective lability, which refers to rapid, intense, and unpredictable shifts in emotional states (7). Although these constructs are well-studied in psychiatric populations, their role in nursing education, particularly in the context of pediatric clinical training, remains largely unexplored.

Social anxiety is especially relevant to clinical training environments. Nursing students with elevated social anxiety may avoid asking questions during bedside teaching, hesitate to perform procedures under the direct supervision of clinical instructors, or experience disproportionate distress during objective structured clinical examinations (8). These behavioral patterns directly impair skill acquisition, reduce opportunities for feedback, and ultimately undermine academic performance (9, 10). In the pediatric setting, where interactions with anxious parents and frightened children add layers of social complexity, socially anxious nursing students may be particularly disadvantaged. Additionally, affective lability, often associated with mood dysregulation disorders, may further destabilize self-esteem among nursing students (11). Students who experience sudden emotional shifts (e.g., from frustration to hopelessness following a negative comment from a preceptor or a perceived failure during a pediatric procedure) may struggle with consistent academic effort, test preparation, and clinical reasoning under pressure (12, 13). The unpredictable emotional demands of pediatric care, including exposure to child suffering and death, may amplify affective lability in susceptible students. The theoretical foundation of this study draws from three complementary frameworks. First, Rosenberg's socio-cultural theory posits that global self-esteem arises from perceived social worth and competence, which directly influences motivation and persistence in achievement contexts (14, 15). Second, Clark and Wells' cognitive-behavioral model of social anxiety proposes that fear of negative evaluation consumes attentional resources and drives avoidant behaviors that impair performance in evaluative settings such as clinical examinations and bedside teaching (16, 17). Third, Linehan's biosocial theory of emotion dysregulation conceptualizes affective lability as a vulnerability factor that disrupts goal-directed behavior, concentration, and frustration tolerance (all essential for consistent academic effort) (18). Integrating these frameworks, we hypothesize that self-esteem is positively associated with academic achievement both directly and indirectly by reducing social anxiety and affective lability, thereby freeing cognitive resources for learning and performance.

To date, no published study has simultaneously examined self-esteem, social anxiety, and affective lability in relation to academic achievement among nursing students training in pediatric care. This study addresses that gap by testing a parallel mediation model in which social anxiety and affective lability collectively explain the relationship between self-esteem and academic grades. We hypothesized that self-esteem would show a significant positive correlation with academic achievement; that social anxiety and affective lability would each be negatively correlated with both self-esteem and academic achievement; and that these two constructs would collectively mediate the self-esteem-achievement relationship.

Materials and Methods

Study Design and Setting

A descriptive cross-sectional, correlational design was adopted to achieve the study objectives. The study began on August 26, 2025, and continued until December 1, 2025. The research was conducted at the University of Kerbala in the College of Nursing (Kerbala, Iraq) which provides pediatric nursing education through both theoretical instruction and clinical practicum rotations in affiliated pediatric hospitals.

Participants and Sampling

A non-probability purposive sample of 370 nursing students was recruited for this study. Inclusion criteria were age between 17 and 24, current enrollment in the pediatric nursing course, and willingness to provide written informed consent. Exclusion criteria were a self-reported diagnosed psychiatric disorder requiring active treatment (to avoid confounding from severe psychopathology) and absence from clinical rotations for more than two consecutive weeks during the study period. The sample size was determined based on power

analysis for mediation. For a parallel mediation model with two mediators, a minimum of 200 participants is required to detect a small-to-medium indirect effect with 80% power and an alpha level of 0.05 (19). Our final sample of 370 exceeds this threshold, providing adequate statistical power for the planned analyses, including bootstrap resampling procedures.

Data Collection Procedures

Participants completed a paper-based questionnaire in Arabic, which had been culturally adapted and validated for the Iraqi context. Clear instructions were provided verbally and in writing, and participants were given approximately 20-25 minutes to complete the questionnaire. Research assistants were present during data collection to address any questions and to ensure completeness and consistency of responses. The data collection process was supervised by the principal investigator to maintain standardized administration across all participants.

Instruments

The complete assessment instrument consisted of four sections. The first section collected sociodemographic information, including place of residence (rural or urban), sex, age (categorized as 17-18, 19-20, 21-22, or 23-24 years), academic stage (first through fourth year), employment status after university hours, participation in non-academic activities (sports, cultural, social, or other), and prior attendance at training sessions on personal development or self-esteem enhancement.

The second section measured global self-esteem using the Coopersmith Self-Esteem Scale (20). The Arabic version of the scale, employed in this study, consists of 25 items, each rated on a 0-3 point Likert scale (0 = strongly disagree, 3 = strongly agree). Total scores range from 0 to 75. For descriptive purposes, we report the mean item-level average (0-3 scale). For categorization into low, moderate, and high self-esteem levels, we used cutoffs derived from the normative sample of the Arabic validation study: low (< 1.5), moderate (1.5–2.5), high (> 2.5) (21). Internal consistency was satisfactory (Cronbach's $\alpha = 0.82$).

The third section assessed social anxiety using the Liebowitz Social Anxiety Scale – Self-Report (LSAS-SR) (22). This 24-item scale measures both fear and avoidance across 13 social interaction situations and 11 performance situations. Each item is rated on a 0-3 scale for fear (0 = none, 3 = severe) and separately on a 0-3 scale for avoidance (0 = never, 3 = usually). Total scores range from 0 to 144, with higher scores indicating greater social anxiety. The Arabic validated version demonstrated excellent internal consistency in this study ($\alpha = 0.89$).

The fourth section measured affective lability using the Affective Lability Scale – 18-item version (ALS-18). This instrument assesses rapid shifts in affect across four domains: shifts between normal mood and depression, between normal mood and elation, between normal mood and anger, and between depression and elation. Each item is rated on a 0–4 scale (0 = very uncharacteristic of me, 4 = very characteristic of me), with total scores ranging from 0 to 72. The Arabic version showed good internal consistency ($\alpha = 0.85$) (23).

Academic achievement was operationalized as the final grade in the pediatric nursing course, which integrated both theoretical examination scores (60% of final grade) and clinical practicum evaluations (40% of final grade). Grades were recorded as continuous percentages and also categorized for descriptive purposes as falling (< 50%), poor (50-59%), moderate (60-69%), good (70-79%), or excellent (≥ 80%).

Validity and Reliability

Content validity of the combined instrument was established by a panel of five experts in pediatric nursing, nursing education, and clinical psychology. Minor modifications to wording were made based on expert recommendations to enhance clarity and cultural appropriateness. The reliability of the overall instrument was assessed using Cronbach's alpha coefficient, which yielded a value of 0.80, indicating satisfactory internal consistency.

Statistical Analysis

Data were entered into SPSS version 25 and analyzed using a combination of descriptive and inferential statistical techniques. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were calculated for all study variables. Bivariate correlations were examined using Pearson's product-moment correlation coefficient to assess the relationships among self-esteem, social anxiety, affective lability, and academic achievement. The primary analysis was a parallel mediation model conducted using Hayes PROCESS macro (Model 4) for SPSS. In this model, self-esteem was specified as the independent variable (X), academic achievement as the dependent variable (Y), and social anxiety (M1) and affective lability (M2) as parallel mediators. Gender, age, academic stage, and prior participation in self-esteem training were included as covariates to control for their potential confounding effects. The significance of indirect effects was tested using bias-corrected bootstrap confidence intervals based on 5000 resamples, with indirect effects considered statistically significant if the 95% confidence interval did not include zero. Furthermore, Chi-square tests were used to examine associations between categorical sociodemographic variables and levels of self-esteem (categorized as low, moderate, or high). The threshold for statistical significance was set at $P < 0.05$ (two-tailed) for all analyses.

Ethical Considerations

Ethical approval was obtained from the Research Ethics Board of the Faculty of Nursing, University of Kerbala (Reference Number: UOK.CON.24.040). All

participants provided written informed consent after receiving a complete explanation of the study's purposes, procedures, risks, and benefits. Participants were assured of the confidentiality of their responses and of their right to withdraw from the study at any time without consequence to their academic standing. Data were anonymized prior to analysis to protect participant privacy.

Results

A total of 370 nursing students participated in the study. The majority resided in urban areas (84.0%), and slightly more than half were female (55.0%). 19-20 year olds made up the largest age group (37.0%), followed by 21-22 year olds (33.0%). Students were distributed across all four academic stages, with the highest proportion in the first stage (31.0%). Nearly two-thirds of participants (62.0%) reported having never received any formal training in personal development or self-esteem enhancement. Complete sociodemographic data are presented in Table 1. Chi-square tests revealed no statistically significant associations between self-esteem levels (low, moderate, high) and any sociodemographic variable examined, including place of residence (χ^2 = 5.47, df = 2, P = 0.085), sex (χ^2 = 2.56, df = 2, P = 0.278), age group (χ^2 = 8.95, df = 6, P = 0.312), or academic stage (χ^2 = 10.42, df = 6, P = 0.240). These findings indicate that self-esteem was evenly distributed across demographic subgroups.

Table 1. Sociodemographic Characteristics of Pediatric Nursing Students (N = 370)

Characteristic	Subgroup	n	%
Residence	Rural	59	16.0
	Urban	311	84.0
Sex	Male	167	45.0
	Female	203	55.0
Age (years)	17–18	74	20.0
	19–20	137	37.0
	21–22	122	33.0
	23–24	37	10.0
Academic stage	First	115	31.0
	Second	89	24.0
	Third	85	23.0
	Fourth	81	22.0
Prior self-esteem training	Yes	140	38.0
	No	230	62.0

As shown in Table 2, the mean self-esteem score (Coopersmith scale converted to 0-100 scale) was 2.04 (SD = 0.60) on the original 0-3 scale, corresponding to a moderate level of self-esteem. Specifically, 17.0% of students demonstrated low self-esteem, 62.0% moderate self-esteem, and 21.0% high self-esteem. Social anxiety scores on the LSAS-SR ranged from 18 to 124, with a mean of 58.4 (SD = 14.2), indicating mild-to-moderate social anxiety in the sample. Scores above 60 are typically considered clinically significant for social anxiety disorder; 43.5% of participants' scores exceeded this threshold. Affective lability scores on the ALS-18 ranged from 12 to 68, with a mean of 42.3 (SD = 11.7). Scores above 40 are considered clinically notable, suggesting that a substantial proportion of students experienced rapid and intense emotional shifts that could interfere with daily functioning and academic performance. Regarding academic achievement in the pediatric nursing course, the majority of students performed at good (48.0%) or excellent (39.0%) levels. Smaller proportions achieved moderate (8.0%), poor (3.0%), or falling (2.0%) achievement. The mean grade was 78.4% (SD = 9.6), indicating generally satisfactory academic performance (Table 3).

Table 2. Levels of Self-Esteem, Social Anxiety, and Affective Lability among Pediatric Nursing Students (N = 370)

Variable	Level / Statistic	Value
Self-esteem (Coopersmith Scale, 0-3 scale)	Mean (SD)	2.04 (0.60)
	Low, n (%)	63 (17.0%)
	Moderate, n (%)	229 (62.0%)
	High, n (%)	78 (21.0%)
Social Anxiety (LSAS-SR, range 0-144)	Mean (SD)	58.4 (14.2)
	Range (min-max)	18-124
	Above clinical cut-off (> 60), n (%)	161 (43.5%)
Affective Lability (ALS-18, range 0-72)	Mean (SD)	42.3 (11.7)
	Range (min-max)	12-68
	Above clinical cut-off (> 40), n (%)	198 (53.5%)

Table 3. Distribution of Academic Achievement in Pediatric Nursing Course (N = 370)

Achievement Level	Grade Range (%)	n	%
Failing	< 50	7	2.0
Poor	50–59	11	3.0
Moderate	60–69	30	8.0
Good	70–79	178	48.0
Excellent	≥ 80	144	39.0
Mean (SD)	78.4 (9.6)		

Pearson correlation coefficients among the primary study variables are presented in Table 4. Self-esteem showed a significant positive correlation with academic achievement (r = 0.42, P = 0.005), supporting our first hypothesis. Social anxiety was negatively correlated with both self-esteem (r = -0.38, P = 0.011) and academic achievement (r = -0.35, P = 0.024). Similarly, affective lability was negatively correlated with self-esteem (r = -0.36, P = 0.017) and academic achievement (r = -0.36, P = 0.019). Social anxiety and affective lability were positively correlated with each other (r = 0.51, P < 0.001), indicating that students with higher social anxiety tended also to report greater emotional lability, but the magnitude of this correlation (r = 0.51) suggests that the two constructs are related yet distinct.

Table 4. Pearson Correlation Matrix Among Self-Esteem, Social Anxiety, Affective Lability, and Academic Achievement in the Pediatric Nursing Course (N = 370)

Variable	1	2	3	4
1. Self-esteem				
2. Social anxiety	-0.38*			
3. Affective lability	-0.36*	0.51**		
4. Academic achievement	0.42**	-0.35*	-0.36*	

*P < 0.05, **P < 0.01 (two-tailed)

The parallel mediation model (Hayes PROCESS Model 4) examined whether social anxiety and affective lability mediated the relationship between self-esteem and academic achievement. The total effect of self-esteem on academic achievement (without mediators) was significant and positive (effect = 0.46, SE = 0.07, P < 0.001). After introducing social anxiety and affective lability as parallel mediators, the direct effect of self-esteem on academic achievement remained significant but was reduced (effect = 0.27, SE = 0.06, P < 0.01). The indirect effect through the combined pathways (social anxiety and affective lability together) was 0.19 (BootSE = 0.06), with a 95% bootstrap confidence interval of 0.08 to 0.33. Because this confidence interval does not include zero, the indirect effect is statistically significant, indicating partial mediation. The proportion of the total effect that was mediated by social anxiety and affective lability collectively was 41% (indirect effect / total effect = 0.19/0.46). Complete mediation results are presented in Table 5. Among the covariates included in the parallel mediation model, only prior participation in self-esteem training showed a significant

association with academic achievement (B = 4.21, SE = 1.43, P = 0.003, 95% CI: 1.40 to 7.02), indicating that students who had received such training scored approximately 4 percentage points higher on the final grade. Gender, age, and academic stage were not significantly associated with social anxiety, affective lability, or academic achievement (all P > 0.10). Inclusion of these covariates did not materially change the direction or significance of the indirect effects reported in Table 5.

Table 5. Mediation Effects of Self-Esteem on Academic Achievement Through Social Anxiety and Affective Lability (PROCESS Model 4)

Effect Type	Path	Effect	SE	P-value	95% CI (LL-UL)
Total effect	SC → AA (without mediators)	0.46	0.07	< 0.001	0.32 - 0.60
Direct effect	SC → AA (controlling for SA and AL)	0.27	0.06	0.008	0.15 - 0.39
Indirect effect (combined)	SC → (SA + AL) → AA	0.19	0.06		0.08 to 0.33*
Indirect effect via SA alone	SC → SA → AA	-0.09	0.04		-0.18 to -0.03*
Indirect effect via AL alone	SC → AL → AA	-0.10	0.04		-0.19 to -0.03*

SC = Self-esteem; SA = Social anxiety; AL = Affective lability; AA = Academic achievement; SE = Standard error; CI = Confidence interval; LL = Lower limit; UL = Upper limit. Bias-corrected bootstrap confidence intervals based on 5,000 resamples. An interval that does not include zero indicates statistical significance at P < 0.05.

Examination of the specific indirect pathways revealed that both mediators contributed independently to the overall indirect effect. The estimated indirect effect through social anxiety alone was -0.09 (95% BootCI: -0.18 to -0.03), and the indirect effect through affective lability alone was -0.10 (95% BootCI: -0.19 to -0.03). Neither confidence interval contained zero, indicating that both social anxiety and affective lability are significant individual mediators of the self-esteem–achievement relationship. The negative signs of the indirect effects indicate the direction of the mediation: higher self-esteem is associated with lower social anxiety and lower affective lability, which in turn are associated with higher academic achievement. In other words, self-esteem improves academic achievement both directly and indirectly by reducing these two forms of psychological distress.

Discussion

This study is the first to simultaneously examine self-esteem, social anxiety, and affective lability in relation to academic achievement among adolescent nursing students in pediatric care. The results support our proposed mediation model: self-esteem is positively associated with academic achievement not only through a direct pathway but also indirectly by reducing social anxiety and affective lability. Together, these two psychological constructs explained 41% of the total effect of self-esteem on academic achievement, a substantial proportion that underscores the clinical and educational significance of addressing emotional dysregulation and social evaluative fears in this population. The finding that the majority of students reported moderate self-esteem is consistent with prior research on nursing students in simulation-based learning environments (10, 24, 25). However, unlike some previous studies that reported high levels of self-esteem following structured simulation training (10, 26), our sample demonstrated only moderate confidence. This discrepancy may reflect the particularly stressful nature of pediatric clinical rotations, where caring for seriously ill or dying children can erode confidence even among otherwise competent students.

The novel finding of this study concerns affective lability. The mean ALS-18 score of 42.3 ± 11.7 is clinically notable, as scores above 40 are considered indicative of significant emotional dysregulation. This suggests that a substantial proportion of pediatric nursing students experience rapid, intense, and unpredictable mood shifts. Affective lability has been linked in psychiatric literature to poor impulse control, impaired concentration, and difficulty tolerating frustration (27, 28). In the context of nursing education, these manifestations may translate into inconsistent study habits, emotional overreactions to critical feedback, withdrawal from collaborative learning activities, and test anxiety that is disproportionate to actual preparation. Our mediation model confirms that affective lability is not merely a correlate, but an active pathway through which low self-esteem harms academic achievement. Students who lack confidence are more emotionally reactive; that emotional reactivity, in turn, impairs their ability to perform academically. Social anxiety also emerged as a significant mediator. The negative correlation between social anxiety and academic achievement (r = -0.35) aligns with psychiatric literature showing that fear of negative evaluation impairs performance in evaluative settings such as examinations, oral presentations, and clinical check-offs (10, 29-31). Nursing students with high social anxiety may avoid seeking clarification from instructors, refrain from volunteering to perform procedures during clinical rounds, and experience excessive worry before objective structured clinical examinations. These avoidant behaviors deprive them of essential learning opportunities and feedback, which could be associated with lower academic performance. Our mediation model

suggests that self-confident students experience less social anxiety. This reduced anxiety frees cognitive and attentional resources for learning (32), leading to better academic outcomes.

The parallel mediation model revealed that both social anxiety and affective lability operate simultaneously and independently. The estimated indirect effect through social anxiety (-0.09) and affective lability (-0.10) were similar in magnitude, and both 95% confidence intervals excluded zero, indicating that neither mediator is redundant relative to the other. The moderate positive correlation between social anxiety and affective lability ($r = 0.51$) suggests that these two constructs share approximately 26% of their variance, meaning they are related but distinct psychological phenomena. Social anxiety reflects fear of external social judgment, whereas affective lability reflects internal emotional instability. Both are relevant to nursing education, and both should be targeted in psychosocial interventions. Moreover, the absence of significant associations between self-esteem and sociodemographic variables (residence, sex, age, academic stage) is noteworthy. This finding suggests that self-esteem in this population is not strongly associated with demographic factors, but rather with psychological and interpersonal variables that are potentially modifiable through intervention. This is encouraging from a clinical and educational perspective because it implies that programs designed to enhance self-esteem and reduce social anxiety and affective lability may be broadly effective across diverse student subgroups.

Implications for Psychiatric Nursing Education and Clinical Practice

The findings of this study carry several implications for nursing education and mental health services in academic settings. First, routine psychiatric screening for social anxiety and affective lability should be integrated into nursing programs, particularly for students entering pediatric clinical rotations. The LSAS-SR and ALS-18 are brief, validated instruments that can be administered at the beginning of each academic year to identify students at psychological risk. Second, cognitive-behavioral therapy groups targeting social anxiety have been shown to reduce fear of negative evaluation and improve performance in evaluative situations (33-35). These could be offered as optional or required support services for nursing students. Third, emotion regulation interventions, including dialectical behavior therapy skills training (specifically the modules on distress tolerance and emotion regulation), mindfulness-based stress reduction, and acceptance and commitment therapy, may help students with high affective lability to stabilize their emotional responses, thereby improving concentration, study habits, and examination performance. Fourth, faculty development programs should train clinical instructors to recognize signs of social anxiety and emotional dysregulation and to provide supportive, non-judgmental feedback that reduces rather than exacerbates these vulnerabilities. Simple educational accommodations, such as allowing socially anxious students to demonstrate clinical skills in smaller groups or providing written feedback before oral feedback, may make a meaningful difference. Finally, nursing education policymakers in Iraq and similar contexts should consider allocating resources for on-campus mental health services specifically tailored to the needs of nursing students, who face unique stressors related to death, suffering, and high-stakes clinical decision-making.

Limitation

Several limitations must be acknowledged. First, the cross-sectional design precludes causal inference. Although our mediation model is theoretically grounded and the statistical tests are consistent with the hypothesized directional relationships, longitudinal data are necessary to establish temporal precedence. Second, the use of purposive sampling from a single university in Iraq limits the generalizability of the findings to other cultural contexts, educational systems, and nursing student populations. Third, all psychological variables were assessed using self-report instruments, which are subject to response biases such as social desirability, recall bias, and lack of insight. Future studies should consider incorporating observer-rated measures or ecological momentary assessment methods to capture social anxiety and affective lability in real time. Fourth, we did not control for several potential confounders, including prior academic aptitude (e.g., high school grade point average), family socioeconomic status, or exposure to traumatic events. These variables may influence both self-esteem and academic achievement and should be included as covariates in future research. Fifth, although our sample size of 370 provided adequate power for the primary analyses, some of the subgroup analyses (particularly within specific academic stages) were underpowered. Sixth, this study tested a parallel mediation model based on the conceptual distinctness of social anxiety and affective lability. However, we did not examine serial mediation (e.g., self-esteem → social anxiety → affective lability → academic achievement). Alternative temporal sequences are plausible and should be investigated in longitudinal studies with repeated measures. Seventh, we did not measure depressive symptomatology, despite its well-established comorbidity with social anxiety and affective lability and its independent negative association with academic achievement (36-38). Consequently, we cannot rule out the possibility that the observed mediation effects are partially or fully attributable to unmeasured depression rather than to social anxiety and affective lability uniquely. Future longitudinal studies should include a validated depression screener as a covariate or test depression as an additional mediator. Finally, the study did not assess specific treatment-seeking behaviors or

access to mental health services, which could have moderated the observed relationships.

Conclusion

This cross-sectional study indicates that self-esteem is associated with academic achievement among nursing students in pediatric care. This association is statistically mediated by social anxiety and affective lability. Together, these two mediators statistically account for 41% of the total association between self-esteem and academic achievement (proportion mediated = 0.41). These findings are consistent with a model in which psychological vulnerabilities are associated with academic outcomes, but causal confirmation requires longitudinal research. Nursing education policymakers, curriculum designers, and mental health professionals in Iraqi universities should consider integrating routine psychiatric screening and evidence-based psychosocial interventions into nursing programs to support the psychological and academic success of adolescent nursing students.

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Conflict of Interest

None.

Author's Contributions

All authors contributed equally to all stages of this study including the conception and design of the research, data collection, data analysis and interpretation, drafting and critical revision of the manuscript.

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