



A Predictive Model of Academic Well-Being Based on Achievement Goal Orientations: The Mediating Role of Academic Buoyancy among Female Secondary School Students

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Article Info

Article type:

Original Research

How to cite this article:

Safaie Mehrabani, P., Dabiri, S., & Jadidi, M. (2026). A Predictive Model of Academic Well-Being Based on Achievement Goal Orientations: The Mediating Role of Academic Buoyancy among Female Secondary School Students. *Health Nexus*, 4(3), 1-10.

<https://doi.org/10.61838/kman.hn.5831>



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ABSTRACT

Academic well-being reflects students' cognitive, emotional, and motivational experiences at school. Achievement goal orientations may shape these experiences by directing students toward learning and personal improvement or toward social comparison and avoidance of failure. Academic buoyancy—the capacity to respond adaptively to ordinary academic setbacks—may partly explain these relationships. This cross-sectional, descriptive-correlational study included 250 female students in Grades 10–12 in Tehran, Iran, during the 2024–2025 academic year. Participants were selected through multistage cluster random sampling. They completed the Academic Well-Being Questionnaire, the goal-orientation subscales of the Patterns of Adaptive Learning Scales, and the Academic Buoyancy Questionnaire. Structural equation modeling and bootstrap tests of indirect effects were conducted with SPSS 27 and AMOS 23. The model showed acceptable fit: $\chi^2(90) = 233.07$, $\chi^2/df = 2.59$, GFI = .936, AGFI = .902, CFI = .954, and RMSEA = .059. Mastery orientation positively predicted academic buoyancy ($\beta = .411$) and academic well-being ($\beta = .488$). Performance-approach ($\beta = -.171$) and performance-avoidance orientations ($\beta = -.352$) negatively predicted buoyancy. Buoyancy positively predicted well-being ($\beta = .422$). Indirect effects through buoyancy were positive for mastery orientation ($\beta = .173$) and negative for performance-approach ($\beta = -.072$) and performance-avoidance orientations ($\beta = -.148$). The model explained 62% of the variance in academic well-being. Mastery-oriented goals and adaptive responses to routine academic difficulties were associated with higher academic well-being. Goals centered on outperforming others or avoiding poor performance were associated with lower buoyancy and well-being. School practices emphasizing learning, personal progress, constructive feedback, and recovery from setbacks may support students' academic well-being.

Keywords: academic well-being; academic buoyancy; achievement goal orientation; mastery goals; performance goals; structural equation modeling; secondary school students

1. Introduction

Educational success cannot be represented by grades or school completion alone. Students' experiences also include satisfaction, engagement, perceived competence, emotional security, and the capacity to remain involved when learning becomes difficult. These dimensions are particularly important during secondary education, when academic evaluation, peer comparison, and decisions about future pathways become more salient. Academic well-being has therefore become a central outcome in educational and positive-psychology research.

Academic well-being refers to the quality of students' psychological and educational functioning in relation to school and learning. It includes school value, academic satisfaction, engagement with school tasks, and the relative absence of school-related burnout. Student accounts likewise describe well-being through interconnected emotional, relational, environmental, and learning experiences (1). Research across educational transitions shows that changes in motivation and goal orientation are linked to changes in academic well-being (2, 3). Thus, well-being is not merely a stable personal characteristic; it is partly shaped by how students interpret competence, effort, success, and failure.

Achievement goal orientation provides a framework for understanding these interpretations. Goal orientations describe the purposes students adopt in academic tasks and the criteria they use to judge competence. The present study examined mastery, performance-approach, and performance-avoidance orientations. Mastery orientation focuses on learning, understanding, effort, and personal improvement. Performance-approach orientation centers on demonstrating superior ability, whereas performance-avoidance orientation centers on preventing the appearance of incompetence or performing worse than peers. The Patterns of Adaptive Learning Scales were developed to measure these distinct achievement goals (4).

Each orientation gives academic difficulty a different meaning. A mastery-oriented student may view difficulty as a signal to increase effort, revise a strategy, or seek additional practice. Errors can function as information about learning. A performance-approach student may interpret the same difficulty as a threat to displaying high ability, particularly under public comparison. For a performance-

avoidance student, difficulty may primarily signal the risk of failure or negative evaluation. These interpretations can affect emotion, persistence, help-seeking, self-regulation, and willingness to remain engaged.

Prior evidence generally links mastery orientation with adaptive educational outcomes. Mastery goals have been associated with academic well-being among medical students (5), and transition-focused research has connected changes in goal orientations with changes in school engagement and well-being (2, 3). Recent studies have also linked academic goals with mental well-being, stress, self-efficacy, positive emotionality, and affective engagement (6, 7). Performance goals are more complex. A performance-approach goal can motivate effort, but its dependence on external comparison may make students' self-evaluation unstable. Performance-avoidance goals are more consistently maladaptive because they organize behavior around fear of failure and negative judgment, particularly under pressure (8).

Goal orientation may influence well-being through students' responses to everyday academic adversity. Academic buoyancy refers to the capacity to deal successfully with routine setbacks and pressures, including disappointing grades, difficult assignments, examination demands, temporary reductions in motivation, and critical feedback (9). It differs from broader resilience constructs focused on severe or chronic adversity. This narrower focus is relevant because ordinary difficulties occur frequently and may accumulate. A buoyant student can regulate the initial response, revise strategies, seek support, and continue working; low buoyancy may lead to avoidance, rumination, withdrawal, or generalized conclusions of incompetence.

Evidence supports the protective role of buoyancy. It is associated with more adaptive responses to test anxiety and setbacks (10), and it can alter the relationships between achievement emotions and academic outcomes (11). Longitudinal research has shown that academic buoyancy and supportive school climates can buffer declines in school well-being (12). Research among female secondary students has also linked buoyancy with meaningful educational and psychosocial outcomes extending into early adulthood (13).

Achievement goals are likely to shape buoyancy because they determine how setbacks are construed. Mastery goals should support buoyancy by framing difficulty as part of

learning and directing attention toward controllable processes. Performance-approach goals may weaken buoyancy when setbacks threaten the intended display of competence, while performance-avoidance goals may be especially detrimental because setbacks activate the outcome the student seeks to avoid. Buoyancy should, in turn, support well-being by preserving engagement, school value, satisfaction, and perceived competence while limiting the progression from temporary pressure to sustained burnout.

Many studies have examined these constructs separately or through bivariate associations. Less is known about whether academic buoyancy mediates the relationships between the three goal orientations and academic well-being in a single structural model, particularly among female upper-secondary students in Tehran. The present study tested this model. It was hypothesized that mastery orientation would positively predict buoyancy and well-being; performance-approach and performance-avoidance orientations would negatively predict both outcomes; buoyancy would positively predict well-being; and buoyancy would mediate the relationships between all three goal orientations and academic well-being.

2. Methods and Materials

2.1. Study Design

The study used an applied, descriptive-correlational, cross-sectional design with structural equation modeling. The design was appropriate for evaluating the pattern of direct and indirect associations among achievement goal orientations, academic buoyancy, and academic well-being. Because all variables were measured at one time point, the model was interpreted as predictive and associative rather than as evidence of temporal or causal effects.

2.2. Participants and Sampling

The statistical population comprised female students in Grades 10, 11, and 12 who attended public and private upper-secondary schools in Tehran during the 2024–2025 academic year. Students were enrolled in mathematics, experimental sciences, humanities, and arts programs. A total of 250 valid questionnaires were included in the analysis. The participants' mean age was 16.84 years ($SD =$

0.83). By grade, 79 students (31.6%) were in Grade 10, 88 (35.2%) were in Grade 11, and 83 (33.2%) were in Grade 12.

Multistage cluster random sampling was used. Four municipal education areas—2, 11, 18, and 22—were selected as first-stage clusters. One female upper-secondary school was then selected from each area. In the next stage, one classroom from each grade in the selected schools was randomly chosen, and all students in those classrooms were invited to participate. The final analytic dataset consisted of 250 completed and valid questionnaires.

The sample size was considered sufficient for the specified structural equation model. The source study used the conventional recommendation of at least 200 participants for SEM and also considered the ratio of participants to estimated model parameters. The final sample exceeded both the minimum estimate based on the parameter-count approach and the general threshold used for models of this complexity.

2.3. Measures

Academic well-being. Academic well-being was measured using the 31-item Academic Well-Being Questionnaire developed by Tuominen-Soini et al. (2012). The instrument assesses four dimensions: school value, school burnout, academic satisfaction, and engagement with school tasks. Items are rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with specified negatively worded items reverse-scored. The possible total score ranges from 31 to 155, with higher scores indicating more favorable academic well-being after appropriate scoring. In the present sample, Cronbach's alpha was .95 for the total scale. The alpha coefficients for school value, school burnout, academic satisfaction, and engagement with school tasks were .83, .75, .87, and .87, respectively.

Achievement goal orientations. Goal orientation was assessed using 18 items from the Patterns of Adaptive Learning Scales developed by Midgley et al. (1998) (4). The measure includes three six-item subscales: mastery orientation, performance-approach orientation, and performance-avoidance orientation. Items were rated on a seven-point response scale. Each subscale score could range from 6 to 42, with higher scores indicating a stronger endorsement of the corresponding achievement goal. In the

present study, Cronbach's alpha was .89 for mastery orientation, .89 for performance-approach orientation, and .86 for performance-avoidance orientation.

Academic buoyancy. Academic buoyancy was measured using the six-item Academic Buoyancy Questionnaire developed by Martin and Marsh (2008) (9). The items evaluate students' perceived capacity to cope with ordinary academic pressure, setbacks, difficulties, and negative feedback. Responses were recorded on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Total scores range from 6 to 30, with higher scores indicating greater academic buoyancy. Cronbach's alpha in the present sample was .90.

2.4. Procedure and Ethical Considerations

Ethical approval was obtained from the North Tehran Branch of Islamic Azad University (IR.IAU.TNB.REC.1404.398), and the required permissions were obtained from the Tehran education authorities. After the participating schools and classrooms had been selected, students received information about the study procedures. Informed consent was obtained from the students and their parents. Participation was voluntary, and the questionnaires were completed through self-report administration in the school setting.

2.5. Statistical Analysis

Descriptive statistics included means, standard deviations, skewness, kurtosis, frequencies, and percentages. Pearson correlations were calculated to examine bivariate relationships. Before structural modeling, the source study evaluated univariate normality, linearity, tolerance and variance inflation factors, multivariate normality, and multivariate outliers. Skewness and kurtosis values were within ± 2 , supporting acceptable univariate normality. The reported diagnostic results indicated no problematic multicollinearity and acceptable factor loadings for the measurement indicators.

Structural equation modeling was performed with AMOS 23 after preliminary analyses in SPSS 27. Model adequacy was evaluated using the chi-square statistic, chi-square divided by degrees of freedom, the Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA). Indirect effects were examined using bootstrap resampling. Standardized path coefficients are reported to facilitate comparison among effects. Statistical significance was evaluated using the p values provided in the source results.

3. Findings and Results

3.1. Descriptive Statistics and Correlations

Mean scores were 24.21 (SD = 5.94) for mastery orientation, 18.57 (SD = 4.05) for performance-approach orientation, 18.30 (SD = 4.19) for performance-avoidance orientation, and 13.84 (SD = 3.61) for academic buoyancy. For academic well-being dimensions, means were 21.60 (SD = 4.51) for school value, 32.35 (SD = 5.62) for school burnout, 10.76 (SD = 2.30) for academic satisfaction, and 24.03 (SD = 3.16) for engagement with school tasks. Skewness and kurtosis values were within -2 to $+2$.

Correlations were in the expected directions. Mastery orientation correlated positively with buoyancy ($r = .30$), school value ($r = .26$), satisfaction ($r = .20$), and engagement ($r = .37$), and negatively with burnout ($r = -.49$). Performance-approach orientation correlated negatively with buoyancy ($r = -.28$), school value ($r = -.32$), satisfaction ($r = -.14$), and engagement ($r = -.35$), and positively with burnout ($r = .44$). Performance-avoidance orientation correlated negatively with buoyancy ($r = -.46$), school value ($r = -.43$), satisfaction ($r = -.23$), and engagement ($r = -.31$), and positively with burnout ($r = .37$). Buoyancy correlated positively with school value ($r = .58$), satisfaction ($r = .38$), and engagement ($r = .52$), and negatively with burnout ($r = -.50$).

Table 1

Descriptive statistics for the study variables

Variable	Mean	SD	Skewness	Kurtosis
Mastery orientation	24.21	5.94	0.10	-0.83
Performance-approach orientation	18.57	4.05	0.23	-0.50
Performance-avoidance orientation	18.30	4.19	0.52	-0.41
Academic buoyancy	13.84	3.61	0.20	-0.12
School value	21.60	4.51	0.06	0.45
School burnout	32.35	5.62	0.42	-0.26
Academic satisfaction	10.76	2.30	-0.48	0.20
Engagement with school tasks	24.03	3.16	-0.63	-0.51

Note. M = mean; SD = standard deviation.

Table 2

Pearson correlations among the study variables

Variable	1	2	3	4	5	6	7	8
1. Mastery orientation	—							
2. Performance-approach	-.22**	—						
3. Performance-avoidance	-.15**	.13*	—					
4. Academic buoyancy	.30**	-.28**	-.46**	—				
5. School value	.26**	-.32**	-.43**	.58**	—			
6. School burnout	-.49**	.44**	.37**	-.50**	-.45**	—		
7. Academic satisfaction	.20**	-.14*	-.23**	.38**	.43**	.32**	—	
8. Task engagement	.37**	-.35**	-.31**	.52**	.56**	.38**	.35**	—

Note. * $p < .05$. ** $p < .01$.

3.2. Model Fit

The structural model showed acceptable fit: $\chi^2(90) = 233.07$, $\chi^2/df = 2.59$, GFI = .936, AGFI = .902, CFI = .954,

and RMSEA = .059. These indices indicated that the hypothesized pattern of relationships was compatible with the observed covariance structure.

Table 3

Fit indices for the proposed structural model

Fit index	Value
χ^2	233.07
df	90
χ^2/df	2.59
GFI	.936
AGFI	.902
CFI	.954
RMSEA	.059

3.3. Direct Effects

Mastery orientation positively predicted academic buoyancy ($\beta = .411$, $p < .001$). Performance-approach ($\beta = -.171$, $p < .001$) and performance-avoidance orientations ($\beta = -.352$, $p < .001$) negatively predicted buoyancy. Academic

buoyancy positively predicted academic well-being ($\beta = .422$, $p < .001$).

The goal orientations also had direct effects on well-being. Mastery orientation was a positive predictor ($\beta = .488$, $p < .001$), while performance-approach ($\beta = -.144$, $p < .001$) and performance-avoidance orientations ($\beta = -.352$, $p < .001$)

.001) were negative predictors. Thus, buoyancy did not fully account for the associations between goal orientations and well-being.

Table 4

Standardized direct and total effects in the structural model

Effect	Path	β	p
Direct	Mastery orientation $\rightarrow$ Academic buoyancy	.411	< .001
Direct	Performance-approach $\rightarrow$ Academic buoyancy	-.171	< .001
Direct	Performance-avoidance $\rightarrow$ Academic buoyancy	-.352	< .001
Direct	Academic buoyancy $\rightarrow$ Academic well-being	.422	< .001
Direct	Mastery orientation $\rightarrow$ Academic well-being	.488	< .001
Direct	Performance-approach $\rightarrow$ Academic well-being	-.144	< .001
Direct	Performance-avoidance $\rightarrow$ Academic well-being	-.352	< .001
Total	Mastery orientation $\rightarrow$ Academic well-being	.661	< .001
Total	Performance-approach $\rightarrow$ Academic well-being	-.216	< .01
Total	Performance-avoidance $\rightarrow$ Academic well-being	-.500	< .01

Note. β = standardized coefficient.

3.4. Indirect and Total Effects

Bootstrap analysis supported mediation. Mastery orientation had a positive indirect effect on well-being through buoyancy ($\beta = .173$, $SE = .030$, $Z = 7.33$, $p < .001$). The indirect effects of performance-approach ($\beta = -.072$, $SE = .067$, $Z = 3.16$, $p = .002$) and performance-avoidance

orientations ($\beta = -.148$, $SE = .021$, $Z = 3.33$, $p = .001$) were negative.

The total effect of mastery orientation on well-being was positive ($\beta = .661$, $p < .001$), whereas the total effects of performance-approach ($\beta = -.216$, $p < .01$) and performance-avoidance orientations ($\beta = -.500$, $p < .01$) were negative. Goal orientations and academic buoyancy jointly explained 62% of the variance in academic well-being.

Table 5

Indirect effects through academic buoyancy

Indirect path	β	SE	Z	p
Mastery $\rightarrow$ Buoyancy $\rightarrow$ Well-being	.173	.030	7.33	< .001
Performance-approach $\rightarrow$ Buoyancy $\rightarrow$ Well-being	-.072	.067	3.16	.002
Performance-avoidance $\rightarrow$ Buoyancy $\rightarrow$ Well-being	-.148	.021	3.33	.001

Note. SE = bootstrap standard error; β = standardized indirect effect.

4. Discussion

This study tested a structural model linking achievement goal orientations to academic well-being through academic buoyancy among female upper-secondary students. Mastery orientation positively predicted both buoyancy and well-being. Performance-approach and performance-avoidance orientations negatively predicted both outcomes, with performance-avoidance showing the stronger adverse pattern. Academic buoyancy positively predicted well-being and partially mediated the relationship between each goal

orientation and well-being. The model explained 62% of the variance in academic well-being, indicating that students' definitions of achievement and their responses to ordinary setbacks are closely associated with the quality of their school experience.

Mastery orientation had the strongest positive total effect. Mastery-oriented students evaluate progress through learning, understanding, effort, and improvement rather than primarily through superiority over peers. This frame makes success more controllable because students can influence effort and strategy even when outcomes are uncertain. It also allows difficulty to remain compatible with competence: a

challenging task can represent an opportunity for growth rather than proof of inability. Consequently, students may sustain engagement without making satisfaction entirely dependent on grades or rank.

This finding is consistent with studies connecting mastery goals to adaptive academic and psychological experiences. Li et al. (2021) identified associations among achievement goals and academic well-being (5), while Tuominen-Soini et al. (2012) and Tuominen et al. (2020) linked goal orientations and motivational change with well-being across educational transitions (2, 3). The present results extend that pattern to female upper-secondary students in Tehran and show that the association occurred both directly and indirectly through academic buoyancy.

The mastery-to-buoyancy pathway clarifies one mechanism. Students inevitably encounter disappointing grades, unfamiliar topics, unsuccessful study strategies, competing deadlines, and critical feedback. A mastery framework directs attention toward what can be learned and changed. When an attempt fails, the student can revise the strategy without treating the event as a definitive judgment of ability. This interpretation is compatible with academic buoyancy, which involves adaptive responses to everyday difficulty (Martin & Marsh, 2008). The indirect effect was significant, but the direct mastery-to-well-being path remained substantial, indicating partial mediation. Other possible mechanisms, such as intrinsic interest, perceived competence, and strategic learning, were not measured and should not be treated as established by the present data.

Performance-approach orientation showed negative direct and indirect associations with well-being. A desire to outperform peers may increase effort in some contexts, but it can also impose emotional costs. When competence is judged through social comparison, even objectively good performance may feel inadequate if another student performs better. In this sample, performance-approach orientation correlated positively with burnout and negatively with school value, satisfaction, engagement, and buoyancy. Its negative indirect pathway suggests that students focused on displaying superior ability may find setbacks more threatening and may respond less flexibly when the desired performance image is challenged.

Performance-avoidance orientation produced the most consistently adverse pattern. It had negative direct effects on

buoyancy and well-being and a further negative indirect effect through buoyancy. Its total effect on well-being ($\beta = -.500$) was substantially larger than that of performance-approach orientation. Performance-avoidance goals organize behavior around preventing mistakes, failure, or the appearance of incompetence. Because school contains repeated evaluation, this orientation can maintain threat even among capable students. Difficulty may direct attention toward the consequences of failure rather than toward the requirements of learning, undermining help-seeking, persistence, and constructive use of feedback. This interpretation is compatible with evidence linking goal orientations under pressure with distinct psychological responses (8) and with recent studies connecting academic goals to stress, mental well-being, self-efficacy, and affective engagement (6, 7).

Academic buoyancy had a substantial positive association with well-being. It correlated positively with school value, satisfaction, and task engagement and negatively with burnout. Thus, adaptive responses to routine difficulty are associated not only with isolated coping episodes but also with the broader quality of academic life. Repeated recovery from setbacks may preserve engagement and prevent temporary stress from developing into persistent exhaustion or withdrawal. This interpretation aligns with research identifying buoyancy as a buffer in secondary education (12), as a resource in managing test anxiety and setbacks (10), and as a factor influencing the links among achievement emotions and outcomes (11). Findings from female secondary students also show that buoyancy is associated with later educational and psychosocial outcomes (13).

The model's 62% explained variance is notable but should not be interpreted causally. Within a cross-sectional self-report design, it indicates that goal orientations and buoyancy capture a substantial portion of the motivational and adaptive processes associated with well-being. It does not establish that changing a path coefficient would produce an equivalent change in students' well-being.

The mediation pattern also provides a theoretical contribution by separating the motivational meaning of achievement from students' capacity to manage its daily demands. Goal orientation concerns why competence is pursued and how success is defined, whereas buoyancy

concerns what students do psychologically when ordinary progress is interrupted. The results suggest that these constructs are related but not interchangeable. Mastery goals were associated with higher well-being partly because they were linked with greater buoyancy, yet mastery retained a direct effect. Similarly, performance goals were linked with lower well-being partly through reduced buoyancy, but their direct effects remained. This partial mediation implies that classroom goal structures and coping-related capacities may represent complementary intervention targets. A school could encourage mastery language while still leaving students without practical strategies for recovering from setbacks; alternatively, it could teach coping techniques within a strongly comparative environment that repeatedly activates performance threat. The model indicates that the most coherent approach would address both the criteria used to define success and the adaptive processes used after difficulty occurs. This interpretation remains bounded by the measured variables and cross-sectional design, but it offers a more precise account than treating motivation or coping as isolated predictors.

The findings have practical implications. Schools should avoid defining achievement exclusively through rank, public comparison, and error-free performance. Competitive evaluation may be unavoidable, but classroom communication can emphasize understanding, individual progress, strategy, and revision. Teachers can frame mistakes as diagnostic information, allow opportunities to improve work, provide feedback that identifies controllable next steps, and recognize persistence and effective strategy use rather than only the highest score. These practices make learning itself a central criterion of success.

Academic buoyancy can also be addressed directly. Students can be taught to distinguish a temporary setback from a stable judgment of ability, analyze why an outcome occurred, choose a revised strategy, and plan a specific next action. Post-assessment reflection can ask what worked, what did not, and what should change. Such practices should not lower academic standards or deny genuine difficulty; they should make responses to difficulty more accurate, active, and manageable. Counselors and teachers should also assess what students' effort is organized around. High effort driven by fear of failure may appear productive while

coexisting with low well-being and weak recovery from setbacks.

5. Limitations and Directions for Future Research

Several limitations constrain interpretation. First, the cross-sectional design does not establish temporal precedence or causality. The proposed direction from goals to buoyancy and well-being is theoretically plausible, but reciprocal relationships are possible. Students with higher well-being may be more likely to adopt mastery goals, and repeated successful coping may alter both goal orientation and well-being. Longitudinal designs are needed to test change over time, and intervention studies are required before causal claims can be made.

Second, all measures were self-reported. Shared method variance, response style, and current mood may have increased some associations. Future studies should combine self-report scales with teacher ratings, behavioral indicators of persistence and help-seeking, attendance, academic records, or repeated assessments following actual setbacks. Third, the sample consisted only of female students in Grades 10–12 in Tehran. Generalization to boys, younger students, rural populations, other provinces, or different educational systems should be cautious. Replication in more diverse samples would clarify whether the relative strength of the pathways is stable across contexts.

Fourth, potentially relevant background variables were not fully controlled, including socioeconomic conditions, family support, personality characteristics, and the psychosocial climate of the school. Supportive class and school environments may interact with buoyancy and goal orientation (12, 14). Future models should examine teacher autonomy support, parental expectations, peer competition, perceived school belonging, and assessment practices as contextual predictors or moderators. Finally, the study evaluated partial mediation through one adaptive construct. Other mediators, such as self-efficacy, achievement emotions, intrinsic motivation, and learning strategies, should be tested in models that remain theoretically focused and appropriately powered.

6. Conclusion

Academic well-being among female upper-secondary students was strongly associated with how students defined

achievement and how they managed routine academic setbacks. Mastery orientation predicted greater academic buoyancy and higher well-being, whereas performance-approach and especially performance-avoidance orientations predicted lower buoyancy and lower well-being. Academic buoyancy partially mediated all three relationships and independently predicted more favorable academic well-being. Together, the variables explained 62% of the outcome variance.

The findings support an educational approach that treats learning, improvement, and adaptive recovery as central outcomes rather than secondary additions to academic performance. Schools cannot eliminate evaluation or difficulty, but they can influence how students interpret both. Environments that reduce excessive social comparison, normalize constructive responses to mistakes, provide actionable feedback, and teach students how to recover from ordinary setbacks may strengthen both academic buoyancy and well-being. Because the evidence is cross-sectional, these practices should be evaluated through longitudinal and intervention research; however, the present model provides a coherent empirical basis for prioritizing mastery-oriented motivation and everyday academic adaptation.

Authors' Contributions

Authors equally contributed to this study.

Declaration

The authors declare that artificial intelligence tools were used only to assist with language editing, translation, and improvement of the manuscript's readability. All conceptualization, study design, data collection, data analysis, interpretation of findings, and final approval of the manuscript were performed by the authors. The authors take full responsibility for the accuracy, integrity, and originality of the content.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Acknowledgments

The authors thank the participating centers, clinicians, adolescents, and guardians who made the study possible.

Declaration of Interest

The authors report no conflict of interest.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Ethics Considerations

The study was approved by the Ethics Committee of the North Tehran Branch of Islamic Azad University (IR.IAU.TNB.REC.1404.398). Informed consent was obtained from participating students and their parents before data collection.

References

- Hossain S, O'Neill S, Strnadova I. What Constitutes Student Well-Being: A Scoping Review Of Students' Perspectives. *Child Indicators Research*. 2023;16(2):447-83. [PMID: 36405573] [PMCID: PMC9668225] [DOI]
- Tuominen H, Niemivirta M, Lonka K, Salmela-Aro K. Motivation Across A Transition: Changes In Achievement Goal Orientations And Academic Well-Being From Elementary To Secondary School. *Learning and Individual Differences*. 2020;79:101854. [DOI]
- Tuominen-Soini H, Salmela-Aro K, Niemivirta M. Achievement Goal Orientations And Academic Well-Being Across The Transition To Upper Secondary Education. *Learning and Individual Differences*. 2012;22(3):290-305. [DOI]
- Midgley C, Kaplan A, Middleton M, Maehr ML, Urdan T, Anderman LH, et al. The Development And Validation Of Scales Assessing Students' Achievement Goal Orientations. *Contemporary Educational Psychology*. 1998;23(2):113-31. [PMID: 9576837] [DOI]
- Li QL, Zhao JY, Tian J, Sun T, Zhao CX, Guo HC, et al. The Association Among Achievement Goal Orientations, Academic Performance, And Academic Well-Being Among Chinese Medical Students: A Cross-Sectional Study. *Frontiers in Psychology*. 2021;12:694019. [PMID: 34408710] [PMCID: PMC8365171] [DOI]
- Ji Q, Zhang L, Xu J, Ji P, Song M, Chen Y, et al. Associations Of Mental Well-Being With Higher Education-Related Stress And Orientation Of The Academic Goals Among Nursing Students: A Cross-Sectional Study. *International Journal of Mental Health Nursing*. 2024;33(4):1062-72. [PMID: 38414160] [DOI]
- Zhao W, Ma R. Investigating The Relationship Between Goal Orientation, Self-Efficacy, Positive Emotionality, And Affective Engagement Among Chinese Students. *Acta Psychologica*. 2025;253:104735. [PMID: 39862451] [DOI]
- Sideridis GD. A Physiological Analysis Of Achievement Goal Orientations Under Pressure: An Experimental Analysis.

International Journal of School & Educational Psychology. 2020;8(3):227-38. [DOI]

9. Martin AJ, Marsh HW. Academic Buoyancy: Towards An Understanding Of Students' Everyday Academic Resilience. Journal of School Psychology. 2008;46(1):53-83. [PMID: 19083351] [DOI]

10. Putwain DW, Jansen In De Wal J, Van Alphen T. Academic Buoyancy: Overcoming Test Anxiety And Setbacks. Journal of Intelligence. 2023;11(3):42. [PMID: 36976135] [PMCID: PMC10056025] [DOI]

11. Putwain DW, Wood P, Pekrun R. Achievement Emotions And Academic Achievement: Reciprocal Relations And The Moderating Influence Of Academic Buoyancy. Journal of Educational Psychology. 2022;114(1):108. [DOI]

12. Hoferichter F, Hirvonen R, Kiuru N. The Development Of School Well-Being In Secondary School: High Academic Buoyancy And Supportive Class- And School Climate As Buffers. Learning and Instruction. 2021;71:101377. [DOI]

13. Collie RJ, Caldecott-Davis K, Martin AJ. Academic Buoyancy Among Female Secondary School Students: An Examination Of Predictors And Outcomes Up To Age 22. Social Psychology of Education. 2024;27(2):363-88. [DOI]

14. Thapa A, Cohen J, Guffey S, Higgins-D'Alessandro A. A Review Of School Climate Research. Review of educational research. 2013;83(3):357-85. [DOI]