Journal of Medical Education Development
e-ISSN: 2980-7670
www.https://edujournal.zums.ac.ir
Volume 18, Issue 3
December 2025
Pages 78-89

Original Article

Academic motivation of dental students and the associated factors

Mahdokht Taheri [1], Mohammad Fakhari [2], Yasamin Babaee Hemmati [3*]

[1] Medical Education Research Center, Education Development Center, Guilan University of Medical Sciences, Rasht, Iran
[2] School of Dentistry, Guilan University of Medical Sciences, Rasht, Iran
[3] Department of Orthodontics, Dental Sciences Research Center, School of Dentistry, Guilan University of Medical Sciences, Rasht, Iran

Article info

Article history:
Received 23 Mar. 2025
Revised 14 Apr. 2025
Accepted 13 Jul. 2025
Published 1 Oct. 2025

***Corresponding author:**
Yasamin Babaee Hemmati, Department of Orthodontics, Dental Sciences Research Center, School of Dentistry, Guilan University of Medical Sciences, Rasht, Iran.
Email: yasi.10482@gmail.com

How to cite this article:
Taheri M, Fakhari M, Babaee Hemmati Y. Academic motivation of dental students and the associated factors. *J Med Edu Dev*. 20245;18(3):78-89.
http://dx.doi.org/10.61882/edcj.18.3.78

Abstract

Background & Objective: C Understanding the factors that influence academic motivation is crucial for identifying challenges and tailoring educational interventions to enhance students' learning experiences and outcomes. Thus, this study aimed to assess the academic motivation of dental students and the factors associated with it.

Materials & Methods: This cross-sectional study evaluated 200 dental students from July 1, 2022, to October 31, 2022. The Academic Motivation Scale (AMS), which comprises three domains of intrinsic and extrinsic motivation, was used for data collection. Data were analyzed using ANOVA, the Kruskal-Wallis test, and the t-test.

Results: Of 200 participants, 117 (58.5%) were males, and 160 (80%) were single. The mean age was 24.33 ± 1.66 years. Academic motivation was significantly associated with age, gender, marital status, parental level of education, family financial status, academic level, having a dentist in the family, and university branch ($p < 0.001$). Females acquired a significantly higher mean score in all three domains than males ($p < 0.05$). The mean scores of extrinsic motivation and amotivation were significantly higher in singles, students whose parents had a high school diploma (compared with those with a higher educational level), students who did not have a dentist in their family, and students attending the Rasht branch ($p < 0.05$). Place of residence had a significant association with the amotivation score ($p < 0.001$), and family financial status had significant associations with both extrinsic motivation ($p < 0.001$) and amotivation ($p < 0.001$) scores.

Conclusion: The academic motivation score of the study population was perfect. Age, gender, marital status, parental level of education, family financial status, educational level, having a dentist in the family, and university branch were found to have a significant impact on the academic motivation of dental students.

Keywords: cross-sectional studies, dental students, motivation

Introduction

Motivation is a psychological construct that drives individuals to pursue their goals [1]. It can be divided into two main categories: intrinsic and extrinsic motivation. Intrinsic motivation involves personal reinforcers that create a natural desire to engage in an activity. In contrast, extrinsic motivation refers to influences that prompt a person to strive for a goal that is separate from and external to themselves. Academic motivation is essential for students and is defined as a pervasive internal desire that directs one's behavior toward learning and academic progress. Both intrinsic and extrinsic motivational factors influence academic motivation. Academic motivation enables students to put in the required effort to complete tasks, achieve goals, and acquire a certain level of competence in their field of study [2].

Psychologists have emphasized the prominent role of motivation in education and learning due to its significant association with acquiring skills, strategies, and behaviors. Academic achievement is a primary

[Downloaded from edujournal.zums.ac.ir on 2026-11-28]

[DOI: 10.61882/edcj.18.3.78]

Copyright © 2025 Zanjan University of Medical Sciences. Published by Zanjan University of Medical Sciences.
This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International license (https://creativecommons.org/licenses/by-nc/4.0/). Noncommercial uses of the work are permitted, provided the original work is properly cited.

construct proposed to explain academic motivation [3]. Students with similar capabilities and learning skills can exhibit significant differences in academic progression, as well as in non-academic activities [1]. These variations may be attributed to differences in their academic motivation.

The association between academic motivation and several personal and social factors has been previously confirmed, indicating a strong influence of these factors on academic motivation. Accordingly, personal, familial, academic, and social factors are associated with the academic motivation construct [3]. The correlation between learning and motivation has also been confirmed, such that previous knowledge of learners affects their motivation [4]. Poor motivation can cause problems and lead to pessimism, anxiety, depression, psychological problems, and a significant decline in individual, social, and occupational performance, adversely affecting the academic performance of students [5, 6]. A lack of job security and concerns about their future careers also hurt the academic motivation of dental students [7]. Assessing the level of academic motivation in students and its impact on their learning process may help mentors plan more efficient strategies and implement educational programs. Even the richest and most well-designed educational programs will not be sufficiently effective without understanding the level of academic motivation of students and the influential factors in this respect [7]. The instructors are well aware that a high level of academic motivation among learners facilitates the communication process, decreases their anxiety, and enhances their creativity and learning [8]. Motivation of students also encourages the mentors and improves the quality of instruction. It also affects their classroom activities [4]. The low level of academic motivation among students is a widespread issue in educational systems worldwide. This problem can have negative consequences, leading to substantial losses in scientific knowledge, cultural advancement, and economic growth [9]. This study focuses on a specific population of dental students to examine the impact of individual, familial, and academic factors on academic motivation. Given the lack of comprehensive data in this area and the limited focus on dental students, this research can serve as a reliable reference for educational planning and improving learning environments. The findings of this study have the potential to offer practical solutions for enhancing academic motivation, ultimately improving the quality of education and professionalism among dental students. Thus, this study aimed to assess the academic motivation of dental students and the factors associated with it.

Materials & Methods

Design and setting(s)

This analytical cross-sectional study was conducted among 3rd- to 6th-year (terms 5-12) dental students of Guilan University of Medical Sciences from July 1, 2022, to October 31, 2022.

Participants and sampling

The minimum sample size was calculated to be 196, according to a previous study by Naseh et al. [10], assuming a mean and standard deviation of academic motivation of 134.54, a study power of 80%, an alpha level of 0.05, and a Cohen's d of 26.91. The inclusion criterion was 3rd- to 6th-year (terms 5-12) dental students of Guilan University of Medical Sciences (Rasht and Anzali branches) in 2022. Students with incomplete questionnaires and those unwilling to participate were excluded from the study. In the Iranian dental education system, terms 5 to 12 comprise the professional phase of study, including both preclinical and clinical training; thus, students in these semesters were selected for this study.

Tools/Instruments

The Persian version of the Academic Motivation Scale (AMS) used in this study was adapted from the version validated by Naseh et al. [10], who reported strong content validity and internal consistency (Cronbach's alpha = 0.87). To further ensure reliability in our population, the questionnaire was pilot-tested with 20 dental students, yielding a Cronbach's alpha of 0.87, which confirms acceptable internal consistency. This scale was selected for the current study due to its multidimensional structure, theoretical foundation, and previous use in various educational and cultural contexts, including studies in Iran. The AMS, initially developed by Vallerand et al. [11], is a standardized and theory-based instrument grounded in Self-Determination Theory (SDT). It is widely used in educational research to assess three distinct types of motivation: intrinsic motivation, extrinsic motivation, and amotivation. This scale has three domains: intrinsic motivation, extrinsic motivation, and amotivation. The intrinsic motivation domain has three dimensions: intrinsic motivation toward accomplishment (questions 6, 13, 20, and 27), intrinsic motivation to know (questions 2, 9, 16, and 23), and intrinsic motivation to experience stimulation

[Downloaded from edujournal.zums.ac.ir on 2026-11-28]

[DOI: 10.61882/edcj.18.3.78]

(questions 4, 11, 18, and 25) [12]. The extrinsic motivation domain has three dimensions: external regulation (questions 3, 10, 17, and 24), introjection (questions 7, 14, 21, and 28), and identification (questions 1, 8, 15, and 22). Questions 5, 12, 19, and 26 addressed amotivation. The questionnaire was scored using a 7-point Likert scale. Answer choice 1 indicated that the respective statement (question) does not correspond at all to the student's reason for going to university. Answer choices 2-6 indicated low to high agreement, and answer choice 7 indicated complete agreement with the student's opinion. Thus, the answer choice or score of 4 was average. A total score between 28 and 69 indicates poor academic motivation; scores ranging from 70 to 112 suggest moderate academic motivation and scores above 112 reflect high academic motivation. The demographic questionnaire included items on age, gender, marital status, place of residence, parental level of education, family financial status, academic term, Grade Point Average (GPA), and whether the student had a dentist in the family. An English translation of the exact Persian version used in the study is provided in **Appendix A** for reference.

Data collection methods

The questionnaires, which included the informed consent form, a demographic questionnaire, and the Persian version of the AMS, were created using the Porsline online survey platform. Students were selected through cluster sampling, with each academic year serving as a separate cluster. Considering the number of admissions in each academic year, the total number of students, and the required sample size, the share of each cluster was determined. The survey link was distributed through email addresses and virtual messaging platforms. Students first read and electronically confirmed the informed consent. They then completed the demographic section, followed by the AMS.

Data analysis

The normality of the data distribution was assessed using the Shapiro-Wilk test, while the homogeneity of variances was evaluated using Levene's test. Accordingly, independent sample t-tests, analysis of variance (ANOVA), Tukey's Honestly Significant Difference (HSD), and Games-Howell tests (for pairwise comparisons) were used for the analysis of quantitative variables when the assumptions were met. The Kruskal-Wallis test, the Mann-Whitney test with Bonferroni adjustment (for pairwise comparisons), and Spearman's rank correlation test were used for data analysis when the assumptions were not met. All statistical analyses were performed using Statistical Package for the Social Sciences (SPSS) version 26 (SPSS Inc., IL, USA) at a 0.05 level of significance.

Results

A total of 200 dental students participated in this study, comprising 83 females (41.5%) and 117 males (58.5%). The mean age of the participants was 24.33 ± 1.66 years. Among them, 80% (n = 160) were single. Also, 55% (n = 110) were living with their families, 27.5% (n = 55) had rented a place, and 17.5% (n = 35) were living in a dormitory. The parental level of education was a Bachelor's degree or higher in 72% of the students and a high school diploma in 26.5%. The family's financial status was moderate in 57.5% of the cases and good in 38.5% of the cases. Overall, Term 12 students had the highest frequency (50%), followed by Term 9 students (12.5%). Additionally, 16.5% reported having a dentist in their family. Of all, 67.5% were attending the Rasht branch, and 32.5% were attending the Anzali branch. The mean GPA of students was 16.24 ± 1.15 out of 20. Given that the total number of eligible students was 282, this corresponds to a response rate of approximately 70.9%. The academic motivation was good in 71.5%, moderate in 28%, and poor in 0.5% of the students. **Table 1** shows the mean scores acquired by students in the three domains of academic motivation.

Table 1. Descriptive statistics for academic motivation domains in study participants

Variable	Mean ± SD	Minimum	Maximum
Academic motivation	122.94 ± 18.45	65	167
Intrinsic motivation	50.93 ± 9.62	14	79
Extrinsic motivation	59.93 ± 9.84	24	84
Amotivation	12.08 ± 7.13	4	28

Note: Descriptive statistics were calculated for all academic motivation domains. Values represent the distribution of scores across study participants.
Abbreviations: SD, standard deviation.

The Spearman's correlation test revealed a significant correlation between age and academic motivation, with academic motivation increasing significantly with age ($r = 0.375$, $p < 0.001$).

Table 2 presents the association between gender, marital status, parental education level, having a dentist in the family, and university branch, and the academic motivation score.

[Downloaded from edujournal.zums.ac.ir on 2026-11-28]

[DOI: 10.61882/edcj.18.3.78]

Table 2. Association of gender, marital status, parental educational level, having a dentist in the family, and university branch with academic motivation scores

Variable	Mean ± SD	*t*	*p*
Gender			
Female	132.55 ± 15.75	6.89	0 < 0.001
Male	116.13 ± 17.19		
Marital status			
Single	126.13 ± 16.81	5.19	0 < 0.001
Married	110.20 ± 19.40		
Parental educational level			
High-school diploma	133.07 ± 15.79	5.30	0 < 0.001
Bachelor's degree and higher	119.08 ± 18.13		
Having a dentist in the family			
No	142.87 ± 16.45	3.40	0 < 0.001
Yes	113.21 ± 24.41		
University branch			
Rasht	127.01 ± 16.27	4.41	0 < 0.001
Anzali	114.49 ± 19.91		

Note: Independent samples t-test was used for data analysis.
Abbreviations: SD, standard deviation; t, independent samples t-test statistic; p, probability value.

The mean academic motivation score was significantly higher among females compared to males ($p < 0.001$), among singles compared to married students ($p < 0.001$), among those whose parents had a high school diploma compared to those whose parents held a Bachelor's degree or a higher level of education ($p < 0.001$), among those without a dentist in their family ($p < 0.001$), and students attending the Rasht branch ($p < 0.001$). Academic motivation was significantly associated with the place of residence, as shown by ANOVA ($p = 0.005$, **Figure 1**), with the mean academic motivation score of those living in a dormitory being higher than that of the other two groups.

Pairwise comparisons using Tukey's test revealed that the mean motivation score of individuals living with their families was significantly lower than that of students who had rented a place ($p = 0.029$) or were living in a dormitory ($p = 0.020$).

The difference between the latter two groups was not statistically significant ($p = 0.969$).

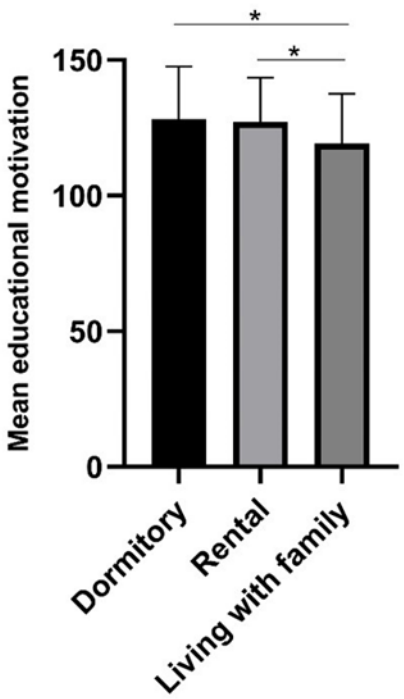


Figure 1. Academic motivation of students based on their place of residence

[Downloaded from edujournal.zums.ac.ir on 2026-11-28]

[DOI: 10.61882/edcj.18.3.78]

The Kruskal-Wallis test indicated a significant association between academic motivation scores and the family financial status of students ($p < 0.001$, **Figure 2**). The mean academic motivation score for those with moderate financial status was higher than that of the other two groups.

Pairwise comparisons using the Mann-Whitney test revealed a significantly higher score for students with moderate financial status compared to those with good economic status ($p < 0.001$). However, the differences between the good and moderate groups ($p = 0.169$) and the poor and moderate groups ($p = 0.999$) were not significant. Academic motivation showed a significant correlation with the academic level (term), as indicated by Spearman's correlation test ($r = 0.464$, $p < 0.001$). GPA had no significant correlation with the academic motivation score of students ($r = 0.006$, $p = 0.935$).

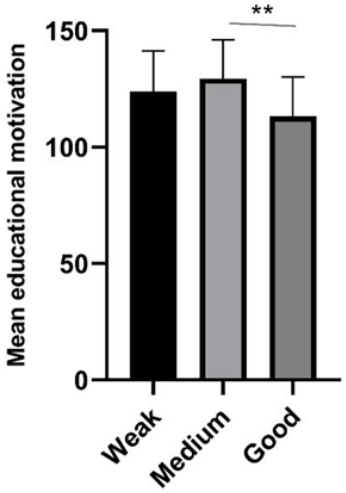


Figure 2. Academic motivation of students based on their family financial status

Table 3 presents the correlation between academic motivation domains and age, academic level (term), and GPA of students. As shown, age had a positive significant association with extrinsic motivation ($p < 0.001$) and motivation ($p < 0.001$) such that these parameters increased with age. The academic level (term) also had a positive and significant association with all three domains ($p < 0.05$). However, GPA had no significant association with any domain ($p > 0.05$).

Table 3. Correlation of academic motivation domain scores with age, academic level (term), and GPA of students

Domain	Age		Academic level		GPA	
	r	*p*	*r*	*p*	*r*	*p*
Intrinsic motivation	0.07	0.318	0.18	0.011	0.02	0.684
Extrinsic motivation	0.24	< 0.001	0.33	< 0.001	0.07	0.327
Amotivation	0.54	< 0.001	0.61	< 0.001	0.06	0.358

Note: Spearman's rank correlation was used for data analysis.
Abbreviations: GPA, grade point average; r, Spearman's rank correlation coefficient; p, probability value.

Table 4 presents the association of academic motivation domain scores with gender, marital status, parental educational level, having a dentist family member, and the attending university branch. As indicated, females achieved a significantly higher mean score in all three domains than males ($p < 0.05$). The mean scores of extrinsic motivation and amotivation were significantly higher in singles than married students ($p < 0.05$), in students whose parents had high-school diplomas compared with Bachelor's degrees and higher (the third group was omitted due to the small number of members), students who did not have a dentist in their family, and students attending the Rasht branch ($p < 0.05$).

Table 5 presents the association between academic motivation domain scores, place of residence, and family financial status.

As indicated, the place of residence had a significant association with the amotivation score ($p < 0.001$). Pairwise comparisons revealed that the mean amotivation score of students living with their families was significantly lower than that of students living in a dormitory ($p < 0.001$) or those who had rented a place ($p < 0.001$). Additionally, the mean amotivation score of students who had rented a place was significantly lower than that of students living in a dormitory ($p < 0.001$).

[Downloaded from edujournal.zums.ac.ir on 2026-11-28]
[DOI: 10.61882/edcj.18.3.78]

Family financial status had a significant association with extrinsic motivation ($p < 0.001$) and amotivation ($p < 0.001$) scores. Pairwise comparisons regarding the extrinsic motivation score showed that the mean extrinsic motivation score of those with moderate family financial status was significantly higher than that of students with good family financial status ($p < 0.001$). Pairwise comparisons of the amotivation scores showed that the mean motivation scores for students with moderate ($p < 0.001$) and poor ($p < 0.001$) family financial status were significantly higher than those of students with good family financial status.

Table 4. Association of academic motivation domain scores with demographic and institutional characteristics of dental students

Variables	Group 1	Mean ± SD	Group 2	Mean ± SD	t-statistic	p-value
Gender						
Intrinsic motivation	Female	52.87 ± 10.07	Male	64.91 ± 9.10	2.32	p = 0.011
Extrinsic motivation	Female	63.40 ± 8.81	Male	57.47 ± 9.82	4.38	p < 0.001
Amotivation	Female	16.37 ± 7.22	Male	9.04 ± 5.28	7.87	p < 0.001
Marital status						
Intrinsic motivation	Single	51.24 ± 9.84	Married	49.67 ± 8.69	0.92	p = 0.179
Extrinsic motivation	Single	61.53 ± 8.76	Married	53.52 ± 11.31	4.17	p < 0.001
Amotivation	Single	13.36 ± 7.07	Married	7.00 ± 4.73	5.38	p < 0.001
Parental educational level						
Intrinsic motivation	High-school diploma	52.17 ± 10.85	Bachelor's degree and higher	50.50 ± 9.22	1.07	p = 0.142
Extrinsic motivation	High-school diploma	62.30 ± 7.41	Bachelor's degree and higher	59.09 ± 10.56	2.38	p = 0.009
Amotivation	High-school diploma	18.60 ± 6.72	Bachelor's degree and higher	9.49 ± 5.31	9.91	p < 0.001
Having a dentist family member						
Intrinsic motivation	No	50.60 ± 9.38	Yes	52.57 ± 10.76	1.07	p = 0.142
Extrinsic motivation	No	61.05 ± 8.74	Yes	54.27 ± 12.89	2.89	p = 0.003
Amotivation	No	13.21 ± 7.02	Yes	6.36 ± 4.48	7.20	p < 0.001
University branch						
Intrinsic motivation	Rasht	51.03 ± 9.78	Anzali	50.72 ± 9.35	0.21	p = 0.417
Extrinsic motivation	Rasht	61.67 ± 8.81	Anzali	56.23 ± 10.89	3.44	p < 0.001
Amotivation	Rasht	14.32 ± 6.74	Anzali	7.45 ± 5.55	7.63	p < 0.001

Note: Independent samples t-test was used for data analysis to compare mean scores between groups for each demographic variable.
Abbreviations: SD, standard deviation; t, t-statistic; p, probability value.

Table 5. Association of academic motivation domain scores with place of residence and family financial status of dental students

Variables	Group 1	Mean ± SD	Group 2	Mean ± SD	Group 3	Mean ± SD	Statistic	p-value
Place of residence								
Intrinsic motivation	Dormitory	49.34 ± 10.54	Rental	50.84 ± 8.66	With family	51.48 ± 9.80	F = 0.65	p = 0.519
Extrinsic motivation	Dormitory	58.51 ± 9.10	Rental	61.94 ± 9.22	With family	59.37 ± 10.28	F = 1.70	p = 0.184
Amotivation	Dormitory	20.31 ± 7.73	Rental	14.45 ± 4.47	With family	8.28 ± 5.02	χ^2 = 71.80	p < 0.001
Family financial status								
Intrinsic motivation[a]	Poor	46.87 ± 5.49	Moderate	51.99 ± 10.13	Good	49.77 ± 8.99	F = 1.99	p = 0.139
Extrinsic motivation[a]	Poor	56.50 ± 6.72	Moderate	63.05 ± 8.71	Good	55.62 ± 10.03	F = 15.66	p < 0.001
Amotivation[b]	Poor	20.37 ± 10.66	Moderate	14.36 ± 6.28	Good	7.82 ± 5.48	χ^2 = 55.17	p < 0.001

Note: One-way ANOVA was used for comparisons marked with [a], and the Kruskal-Wallis test was used for comparisons marked with [b]. For place of residence comparisons, one-way ANOVA was used for intrinsic and extrinsic motivation, and Kruskal-Wallis test was used for amotivation.
Abbreviations: SD, standard deviation; F, analysis of variance statistic; χ^2, Chi-square statistic; p, probability value.

[Downloaded from edujournal.zums.ac.ir on 2026-11-28]

[DOI: 10.61882/edcj.18.3.78]

Discussion

This study investigated the academic motivation of dental students and the factors that influence it. The results indicated that the majority of dental students exhibited good academic motivation (71.5%), which aligns with findings from previous studies conducted on Iranian dental students at various universities [13-15]. Considering that dental students in Iran strive to pass the university entrance exam, they are expected to possess strong academic motivation [16]. Imagining a bright future with optimal job satisfaction and a high level of income can further increase their motivation [14]. This study makes a novel contribution to the literature on academic motivation among dental students in Iran, focusing on students from the 5th to 12th terms, which encompasses both the preclinical and clinical phases of dental education. While previous studies have primarily explored motivation through qualitative approaches [17] or focused on limited educational stages [18], our study quantitatively investigates motivation across a broader academic spectrum using the validated Persian version of the AMS. Furthermore, by examining associations between academic motivation and multiple demographic factors—such as parental education, family financial status, and the presence of a dentist in the family—our findings provide a more nuanced understanding of social and familial influences on dental students' motivation. This approach builds upon prior research and offers practical insights for designing interventions to enhance motivation and academic performance in dental education [19]. In the Iranian dental curriculum, the first four semesters are primarily dedicated to basic sciences and general university courses, with minimal focus on core dental content. Starting from semester 5, students enter the professional phase of their training, which includes both preclinical and clinical education specific to dentistry. This phase marks a significant transition in academic demands, learning environments, and the responsibilities of students. Therefore, by including only students from semesters 5 to 12, this study aims to assess academic motivation during the period when students are fully engaged with dental education and are more likely to be influenced by the complexities of skill acquisition, clinical exposure, and future professional expectations. This approach ensures relevance and precision in evaluating factors that shape motivation in the context of professional dental training [17]. In the present study, the extrinsic motivation score of students was higher than their intrinsic motivation score. The amotivation score was the lowest, which is in agreement with the results of Roshan Milan et al. [7] and Clark and Schroth [20], but in contrast to the findings of Azizzadeh Forozi et al. [21], who reported almost equal extrinsic and intrinsic scores among university faculty members. This difference can be due to different target groups and study populations (dental students vs. university faculty members).

In the current study, the academic motivation of students increased significantly with age, which may be due to their greater involvement in clinical practice at higher academic levels, thereby improving their motivation. The same result was reported by Vakilimofrad et al. [22]. Additionally, females demonstrated significantly higher academic motivation than males in the present study, which is in agreement with previous findings [14, 16, 23, 24]. A prior survey of gender-specific differences in academic motivation and progression reported higher intrinsic motivation in females and higher extrinsic motivation in males [25]. Another study, however, found no significant association between gender and academic motivation [26]. Higher academic motivation in Iranian female students may be due to their eagerness for financial independence (unlike the previous generation).

Additionally, as reported in the literature, the number of female dental students exceeds that of male dental students in many countries [27-30]. Dentistry is an appealing profession for women as it allows them to strike a balance between their personal and professional lives [31]. The present results also showed that the mean academic motivation score was significantly higher in singles than married students, which was in contrast to the findings of Roshan Milan et al. [7] and Izadi et al. [14], who found no significant association between marital status and academic motivation, and the results of Hakimi et al. [26], who showed significantly higher academic motivation of married students. A small number of married students in the present study may explain the differences in the results. The mean academic motivation score of students living in a dormitory was significantly higher than that of students living with their parents or those who had rented a place to live. Similarly, Vakilimofrad et al. [17] reported higher academic motivation scores for non-native students. However, Win and Miller [32] found no significant association between place of residence and academic motivation. The mean academic motivation score of students whose parents had a high school diploma was higher than that of students whose parents had a higher educational level. Similarly, Naseh et al. [10] found an inverse correlation between parental educational level and the student's academic motivation. However, Zahiri Naw and Rajabi [23]

[Downloaded from edujournal.zums.ac.ir on 2026-11-28]

[DOI: 10.61882/edcj.18.3.78]

reported that students whose parents had a higher educational level exhibited higher academic motivation, while another study found no significant association in this regard [14]. This controversy warrants further investigation in this respect. In the present study, students with a moderate family financial status had a significantly higher academic motivation score than those with good economic status. Consistent with the present results, a significant inverse correlation between academic motivation and family economic status has also been reported by many previous studies [33, 34]. This finding may be due to a lack of financial concerns among students from wealthy families. With an increase in academic level, the motivation score of students significantly increased in the current study, which aligns with the results of Hakim et al. [26] and may be attributed to the initiation of clinical practice. However, this finding differs from the results of some previous studies [16, 26], which reported a decline in motivation as academic levels increased, likely due to a heightened awareness of professional issues [35]. Additionally, the academic motivation score was higher in students who did not have a dentist in their family, which may be due to the good financial status of families with a dentist as a family member and, subsequently, lower motivation in students. The present results also showed higher motivation scores among students attending the Rasht branch, likely because this branch requires a higher entrance exam score for admission, offers superior facilities, and is free, whereas the Anzali branch has a higher admission fee and fewer facilities. The GPA of students had no significant association with their academic motivation, which was in contrast to previous studies that reported higher motivation among students with higher GPAs [13]. The different results observed in the present study may be attributed to the impact of COVID-19 on students' GPAs. The assessment of the association between academic motivation domains and various parameters revealed that age had a significant positive correlation with the domains of extrinsic motivation and amotivation. Additionally, females scored higher in all three domains than males, which aligns with the results of Roshan Milan et al. [7], who reported significantly higher motivation scores in general as well as in the extrinsic and intrinsic domains for females. However, some studies [36] found no significant difference in intrinsic motivation between males and females. Variations in the reported results can be due to differences in study populations, educational conditions, and social factors. Single students exhibited significantly higher scores in both extrinsic motivation and amotivation. Previous studies found no significant association between academic motivation and marital status [10, 37], which may be due to differences in study populations, educational conditions, and social factors.

In terms of place of residence, the present results revealed significantly lower amotivation scores in students living with their families compared with those living in a dormitory or having rented a place. Also, the mean amotivation score of those who had rented a place was significantly lower than the mean score of students staying in a dormitory. Moreover, students attending the Rasht branch had the significantly higher extrinsic motivation and amotivation scores. Naseh et al. [10] also noted a significant association between the attending university and students' academic motivation. Furthermore, the extrinsic motivation and amotivation scores of students whose parents held a high school diploma were higher than those of students whose parents had a higher level of education. The mean extrinsic motivation score of students with moderate financial status was higher than that of students with good economic status. Also, the mean amotivation score of students with moderate and poor economic status was higher than that of students with good financial status. Additionally, with an increase in academic level, the mean score of all three domains increased significantly. Students without a dentist in their family acquired significantly higher extrinsic motivation and amotivation scores. Gobena et al. [38], in their study in East Ethiopia, found that family income had no significant effect on the educational progression of students; however, parental educational level contributed to their academic progression by 40.96%. Griffin et al. [39] demonstrated that parental involvement, cultural background, and family environment can have a significant impact on a child's motivation. Mohebbi et al. [19] reported that low financial support was associated with a higher level of academic burnout. Another study found a significant correlation between fathers' high educational levels and students' academic motivation [40]. The main limitations of this study included poor cooperation from some students in completing the questionnaire, desirability bias, and the psychological status of the students, which may have influenced their responses. Future research should consider the educational history of students, such as their performance on basic science exams, to gain deeper insights into their academic motivation. Additionally, factors like the academic level of students should be standardized in future studies to yield more accurate results.

[Downloaded from edujournal.zums.ac.ir on 2026-11-28]

[DOI: 10.61882/edcj.18.3.78]

Conclusion

The academic motivation score of the study population was perfect.

Age, gender, marital status, parental level of education, family financial status, academic level, having a dentist in the family, and university branch were found to have a significant impact on the academic motivation of dental students.

Ethical considerations

The study protocol was approved by the university's ethics committee (IR.GUMS.REC.1401.007).

Artificial intelligence utilization for article writing

The authors declare that no artificial intelligence technologies were used in the process of writing this article for generating content, ideas, analysis, or other purposes.

Acknowledgment

This work was supported by Guilan University of Medical Sciences and derived from the doctoral thesis of a dental student at Guilan University of Medical Sciences.

Conflict of interest statement

The authors declare that they have no conflicts of interest.

Author contributions

MT: Study Design, Review, and Editing, Final Approval

MF: Data Collection, Manuscript Preparation, Final Approval

YBH: Study Concept, Manuscript Preparation, Investigation, Visualization, Final Approval

Funding

None.

Data availability statement

The datasets used and/or analyzed during the current Study are available from the corresponding author upon reasonable request. Additionally, the datasets that support the conclusions of this article are included within the article itself.

References

1. Bandhu D, Mohan MM, Nittala NA, Jadhav P, Bhadauria A, Saxena KK. Theories of motivation: a comprehensive analysis of human behavior drivers. *Acta Psychol (Amst).* 2024;244:104177. https://doi.org/10.1016/j.actpsy.2024.104177

2. Morris LS, Grehl MM, Rutter SB, Mehta M, Westwater ML. On what motivates us: a detailed review of intrinsic v. extrinsic motivation. *Psychol Med.* 2022;52(10):1801–16. https://doi.org/10.1017/S0033291722001611

3. Vu T, Magis-Weinberg L, Jansen BR, van Atteveldt N, Janssen TW, Lee NC, et al. Motivation-achievement cycles in learning: a literature review and research agenda. *Educ Psychol Rev.* 2022;34(1):39–71. https://doi.org/10.1007/s10648-021-09616-7

4. Zheng B, Chang C, Lin CH, Zhang Y. Self-efficacy, academic motivation, and self-regulation: how do they predict academic achievement for medical students? *Med Sci Educ.* 2021;31(1):125–30. https://doi.org/10.1007/s40670-020-01143-4

5. Mahdavi P, Valibeygi A, Moradi M, Sadeghi S. Relationship between achievement motivation, mental health and academic success in university students. *Community Health Equity Res Policy.* 2023;43(3):311–7. https://doi.org/10.1177/0272684X211029933

6. Kotera Y, Taylor E, Fido D, Williams D, Tsuda-McCaie F. Motivation of UK graduate students in education: self-compassion moderates pathway from extrinsic motivation to intrinsic motivation. *Curr Psychol.* 2023;42(12):10163–76. https://doi.org/10.1007/s12144-021-02301-6

7. Roshan Milani S, Aghaii Monvar I, Kheradmand F, Saboory E, Mikaili P, Masudi S, et al. A study on the academic motivation and its relation with individual state and academic achievement on basic medical students of Urmia university of medical sciences. *J Urmia Nurs Midwifery Fac.* 2011;9(5): 357–66 https://eprints.umsu.ac.ir/id/eprint/4419

8. Güngör A, Sari HI. Effects of academic motivation on school burnout in Turkish college students. *Int J Adv Couns.* 2022;44(3):414–31. https://doi.org/10.1007/s10447-022-09477-x

9. Eremicheva OY, Yudin VV, Sheptukhina II, et al. Research of academic motivation at the stage of forming a threshold level of mastering competences. *Int J Environ Sci Educ.* 2016;11(14):6949–62. https://eric.ed.gov/?id=EJ1115743

10. Naseh L, Mardanian Dehkordi L, Naseh H. Investigation of educational motivation and its related factors in students of Shahrekord university of medical

[Downloaded from edujournal.zums.ac.ir on 2026-11-28]

[DOI: 10.61882/edcj.18.3.78]

sciences. *J Med Educ Dev.* 2017;12(1):27–39. http://jmed.ssu.ac.ir/article-1-774-en.html
11. Vallerand RJ, Pelletier LG, Blais MR, Briere NM, Senecal C, Vallieres EF. The academic motivation scale: a measure of intrinsic, extrinsic, and amotivation in education. *Educ Psychol Meas.* 1992;52(4):1003–17. https://doi.org/10.1177/0013164492052004025
12. Weisani M, Lavasani MG, Ejei J. The effect of achievement goals on statistic anxiety through academic motivation and statistic learning. *J Psychol.* 2012;16(2):142–60. https://psycnet.apa.org/record/2012-20892-003
13. Yousefi A, Ghassemi G, Firouznia S. The relationship between academic motivation and academic achievement in medical students of Isfahan university of medical sciences. *Iran J Med Educ.* 2009;9(1):79–84 https://www.semanticscholar.org/paper/The-Relationship-between-Academic-Motivation-and-in-Reza-Gh.R./9b2919e132658035b85a0b533b629ee6aef20809
14. Izadi S, Jouybari L, Behnampoor N, Taghavi A, Baiky F. Academic motivation and associated factors of the Golestan university of medical sciences. *Dev Strateg Med Educ.* 2014;1(2):44–50. http://dsme.hums.ac.ir/article-1-75-en.html
15. Sharififard F, Asayesh H, Nourozi K, Hosseini MA, Kharameh ZT. The relationship between motivation and academic burnout in nursing and paramedical students of Qom university of medical sciences, Iran. 2016;9(12):72–8. http://journal.muq.ac.ir/index.php?slc_lang=en&slc_sid=1
16. Rouhi G, Hoseini SA, Badeleh MT, Rahmani H. Educational motivation and its relationship with some factors among the students of Golestan university of medical sciences. *Strides Dev Med Educ.* 2008;4(2):77–83. https://sdme.kmu.ac.ir/article_90123.html
17. Katebi K, Ghaffarifar S, Dehghani G, Pourabbas A. Exploring the experiences of dentistry students of Tabriz university of medical sciences of academic motivation: a content analysis study. *BMC Med Educ.* 2024;24(1):245. https://doi.org/10.1186/s12909-024-05237-0
18. Khami M, Murtomaa H, Jafarian M, Vehkalahti M, Virtanen J. Study motives and career choices of Iranian dental students. *Med Princ Pract.* 2008;17(3):221–6. https://doi.org/10.1159/000117796
19. Mohebbi SZ, Gholami M, Chegini M, Ghoreyshi Y, Gorter RC, Bahramian H. Impact of career choice motivation on academic burnout in senior dental students: a cross-sectional study. *BMC Med Educ.* 2021;21(1):52. https://doi.org/10.1186/s12909-020-02475-w
20. Clark MH, Schroth CA. Examining relationships between academic motivation and personality among college students. *Learn Individ Differ.* 2010;20(1):19–24. https://doi.org/10.1016/j.lindif.2009.10.002
21. Azizzadeh Forozi M, Mohammad Alizadeh S, Fasihi Harandi T. Motivational factors affecting educational performance from the point of view of faculty members. *Strides Dev Med Educ.* 2006;2(2):102–8. https://sdme.kmu.ac.ir/article_90093.html
22. Vakilimofrad H, Ahmadian M, Masoumi L, Halaj MM. Factors affecting academic motivation of medical library and information science students: a case study of Hamadan university of medical sciences, Iran. *Libr Philos Pract.* 2021;5340. https://digitalcommons.unl.edu/libphilprac/5340
23. Zahiri Naw B, Rajabi S. The study of variables reducing academic motivation of Persian language and literature students. *Teach Learn Res.* 2009;7(1):69–80. https://tlr.shahed.ac.ir/article_2227_en.html?lang=en
24. Tamnnaeifar MR, Seddighi Arfaei F, Maspi A. An investigation about the relationship between personality traits, advanced motivation and learning styles among university students. *High Educ Lett.* 2014;7(25):145–58. https://journal.sanjesh.org/article_15000.html?lang=en
25. Salta K, Koulougliotis D. Assessing motivation to learn chemistry: adaptation and validation of Science Motivation Questionnaire II with Greek secondary school students. *Chem Educ Res Pract.* 2015;16(2):237–50. https://doi.org/10.1039/C4RP00196F
26. Hakim A, Azimi N, Latifi M, Ghalvandi H. Nursing students viewpoints about educational motivation and its related factors in Ahvaz Jundishapur university of medical sciences. *Res Med Educ.* 2015;7(1):35–44. https://doi.org/10.18869/acadpub.rme.7.1.35
27. Scarbecz M, Ross JA. Gender differences in first-year dental students' motivation to attend dental school. *J Dent Educ.* 2002;66(8):952–61. https://doi.org/10.1002/j.0022-0337.2002.66.8.tb03564.x
28. Vigild M, Schwarz E. Characteristics and study motivation of Danish dental students in a longitudinal perspective. *Eur J Dent Educ.* 2001;5(3):127–33. https://doi.org/10.1034/j.1600-0579.2001.050306.x
29. Hennequin M, Tubert S, Devillers A, et al. Socio-economic and schooling status of dental undergraduates from six French universities. *Eur J Dent Educ.* 2002;6(3):95–103. https://doi.org/10.1034/j.1600-0579.2002.60301.x
30. Stewart FM, Drummond JR, Carson L, Hoad Reddick

[Downloaded from edujournal.zums.ac.ir on 2026-11-28]

[DOI: 10.61882/edcj.18.3.78]

G. The future of the profession--a survey of dental school applicants. *Br Dent J.* 2004;197(9):569–73. https://doi.org/10.1038/sj.bdj.4811810
31. Stewart FM, Drummond JR, Carson L, Theaker ED. Senior dental students' career intentions, work-life balance and retirement plans. *Br Dent J.* 2007;203(5):257–63. https://doi.org/10.1038/bdj.2007.790
32. Win R, Miller PW. The effects of individual and school factors on university students' academic performance. *Aust Econ Rev.* 2005;38(1):1–18. https://doi.org/10.1111/j.1467-8462.2005.00349.x
33. Yukseloglu SM, Karaguven MH. Academic motivation levels of technical high school students. *Procedia Soc Behav Sci.* 2013;106:282–8. https://doi.org/10.1016/j.sbspro.2013.12.033
34. Rostami B, Moein Z, Fakour E, Amini K, Rostami H. Academic motivation and relevant predictive factors in pharmaceutical students of Zanjan university of medical sciences, Zanjan, Iran in 2016. *J Med Educ Dev.* 2018;10(28):27–38. https://doi.org/10.29252/edcj.10.28.27
35. Kosgeroglu N, Acat MB, Ayranci U, Ozabaci N, Erkal S. An investigation on nursing, midwifery and health care students' learning motivation in Turkey. *Nurse Educ Pract.* 2009;9(5):331–9. https://doi.org/10.1016/j.nepr.2008.07.003
36. Dehghan F. The academic motivation and academic achievement in Iranian universities of medical sciences: a systematic review and meta-analysis. *Int J Educ Cogn Sci.* 2023;4(3):54–65. https://iase-ijeas.com/article_192810.html
37. Kavousipour S, Noorafshan A, Pourahmad S, Dehghani-Nazhvani A. Achievement motivation level in students of Shiraz university of medical sciences and its influential factors. *J Adv Med Educ Prof.* 2015;3(1):26–32. https://pmc.ncbi.nlm.nih.gov/articles/PMC4291505
38. Gobena GA. Family socio-economic status effect on students' academic achievement at college of education and behavioral sciences, Haramaya University, Eastern Ethiopia. *J Teach Educ Educ.* 2018;7(3):207–22. https://dergipark.org.tr/en/pub/jtee/issue/43443/530195
39. Griffin B, Hu W. Parental career expectations: effect on medical students' career attitudes over time. *Med Educ.* 2019;53(6):584–92. https://doi.org/10.1111/medu.13812
40. Pinneo L, Nolen A. Parent involvement and student academic motivation towards science in 9th grade. *Humanit Soc Sci Commun.* 2024;11(1):273. https://doi.org/10.1057/s41599-024-02707-0

[Downloaded from edujournal.zums.ac.ir on 2026-11-28]

[DOI: 10.61882/edcj.18.3.78]

Appendix A. English translation of the Persian version of the Academic Motivation Scale used in this study

Item Number	Item Statement (English Translation)	Likert Scale
1	Because I experience pleasure and satisfaction while learning new things.	1–7
2	For the pleasure I experience while surpassing myself in my studies.	1–7
3	For the pleasure I experience when I discover new things never seen before.	1–7
4	Because I enjoy taking courses that are challenging and that I learn a lot from.	1–7
5	For the pleasure that I experience when I read interesting authors.	1–7
6	Because it is a good way to learn lots of things which could be useful in a job.	1–7
7	Because I think that a college education will help me better prepare for the career I have chosen.	1–7
8	Because I believe that a few additional years of education will improve my competence as a worker.	1–7
9	Because I want to have "the good life" later on.	1–7
10	To prove to myself that I am capable of completing my college degree.	1–7
11	To show myself that I am an intelligent person.	1–7
12	Because I want to show myself that I can succeed in my studies.	1–7
13	Because I want to have a good life later on.	1–7
14	Because I want to be successful in my future job.	1–7
15	Because I feel that I have to do it to satisfy people who want me to succeed.	1–7
16	Because I want to show others that I can succeed in college.	1–7
17	Honestly, I don't know; I feel like I'm wasting my time in school.	1–7
18	I once had good reasons for going to college, but now I wonder whether I should continue.	1–7
19	I can't see why I go to college and frankly, I couldn't care less.	1–7
20	I don't know; I can't understand what I am doing in school.	1–7
21	Because I enjoy the feeling of accomplishment when I succeed in my studies.	1–7
22	Because I enjoy the intellectual challenge of my courses.	1–7
23	Because learning about new subjects is interesting.	1–7
24	Because I feel that college allows me to experience personal growth.	1–7
25	Because I feel that I have to go to college.	1–7
26	Because going to college is what is expected of me.	1–7
27	Because I feel pressure from my family to attend college.	1–7
28	Because I feel I have no choice but to go to college.	1–7

Note: The Academic Motivation Scale consists of 28 items measuring intrinsic motivation, extrinsic motivation, and amotivation. Each item is rated on a 7-point Likert scale ranging from 1 (Does not correspond at all) to 7 (Corresponds exactly).
Abbreviations: AMS, Academic Motivation Scale.

[Downloaded from edujournal.zums.ac.ir on 2026-11-28]

[DOI: 10.61882/edcj.18.3.78]