Strides Dev Med Educ. 2023 September; 20(1):137-144. doi 10.22062/sdme.2023.198514.1206

Original Article

Role of the Educational Atmosphere on Self-Efficacy Among Dental Students

Fatemeh Farshad[1], Masoomeh Kheirkhah[2], Jorma I. Virtanen[3], Hossein Hessari[4*]

[1]Doctor of Dental Surgery, Community Oral Health Department, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran
[2]PhD of Medical Education, Associated Professor Nursing Care Research Center (NCRC), Department of Midwifery and Reproductive Health, School of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran
[3]PhD of Oral Public Health, Department of Clinical Dentistry, Faculty of Medicine, University of Bergen, Norway; Institute of Dentistry, University of Turku, Finland
[4]PhD of Oral Public Health, Research Center for Caries Prevention, Dentistry Research Institute, Tehran University of Medical Sciences, Tehran, Iran

Received: 2023 April 07
Revised: 2023 September 11
Accepted: 2023 September 27
Published online: 2023 September 29

***Corresponding author:**
Research Center for Caries Prevention, Dentistry Research Institute, Tehran University of Medical Sciences, Tehran, Iran.
Email: h-hessari@tums.ac.ir

Citation:
Farshad F, Kheirkhah M, Virtanen JI, Hessari H. Role of the educational atmosphere on self-efficacy among dental students. Strides Dev Med Educ. 2023 September; 20(1):137-144. doi:10.22062/sdme.2023.198514.1206

Abstract

Background: Learning is due to behavioral changes in knowledge, skills, and attitude.

Objectives: The current research assesses the state of the atmosphere, educational environment, and self-efficacy domains. It also assesses how the educational environment affects dental students' sense of self-efficacy.

Methods: All clinical undergraduate dental students (N=190) at Tehran University of Medical Science's School of Dentistry were the focus of a descriptive-analytical research conducted in 2018. The Dundee Ready Education Environment Measure (DREEM), the demographic surveys, and the validated Persian version of the Sherer Self-Efficacy Scale were all employed by the researchers. The DREEM assessed students' perceptions of learning (PoL), teaching (PoT), academic self-perception (ASP), atmosphere (PoA), and social self-perception (SSP) in addition to other key categories. Demographic factors and educational data (academic level, admittance quota, overall average grade, final semester grade, employment experience outside of dentistry school, and self-perceived effectiveness) were included in the demographic questionnaire. The factors from the demographic questionnaire were compared to the educational climate and self-efficacy using linear regression analysis. Additionally, the association between the educational environment and self-efficacy was assessed using Pearson's correlation (rho) coefficient.

Results: The majority of clinical dentistry students (87.3%) were single, female (52.6%), and lived in dorms. All DREEM domains and the overall educational environment, with the exception of the PoT domain (p-value=0.302), significantly correlated positively with students' self-efficacy (p-value < 0.05). Self-efficacy and the overall educational environment are highly associated (p=0.001, rho=0.311).

Conclusion: A good educational atmosphere may enhance dental students' self-efficacy.

Keywords: Dental Student, Education, Atmosphere, Self-Efficacy, Learning

Background

Self-efficacy is described as a psychological construct in the social learning theory (1). This idea was described by Albert Bandura as one's confidence in carrying out the behaviors necessary to get consistent results. Four sources of self-efficacy were proposed by Bandura's theory: verbal persuasion, mastery experiences, vicarious experiences, and physical sensations (2). To put it another way, self-efficacy is the certainty a person has about doing something exceptional and the courage to take action (3), both of which are necessary for practicing dentistry professionally. The contact between instructors and students leads to learning. It has to do with how learners' knowledge, abilities, and attitudes evolve through time in terms of behavior. The educational environment and other factors make learning more efficient (4). The intended curriculum is reflected in the learning environment (5). It could make a difference in how motivated children are and how well they do in school (6). The learning environment, instructors' attitudes toward teaching, the institutional behavioral culture, students' perceptions of the learning

Copyright © 2023, Strides in Development of Medical Education is Published by Kerman University of Medical Science. This is an openaccess article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (http://creativecommons.org/licenses/by-nc/4.0/) which permits copy and redistribute the material just in noncommercial usages, provided the original work is properly cited.

environment, the social context, and curriculum implementation are all part of the educational environment (7, 8). Successful academic and educational organizations in pre-clinical and clinical medical/dental courses are aided by the assessment of the curriculum and the learning experiences of the students. According to studies, academic discontent lowers student motivation and raises their anxieties (9-11). Self-efficacy has a modest impact on (non-university) student accomplishment, according to a meta-analysis (12). On the other hand, in a stressful atmosphere, academic competence and personal skills may be diminished (13). Education at dentistry schools is influenced by a number of variables, including student background and socioeconomic position, treatment results assessed by patients, educational exams conducted by instructors according to a set timetable, academic aptitude, and individual abilities. Studies on the association between academic degrees, interest in the topic of study, contentment with learning, grade, gender, family education, economic position, and self-efficacy have been conducted in nursing and medical schools with varying degrees of success (2, 14). Few studies have examined dental students' self-efficacy or learning environment (10, 13, 15, 16), but to the best of our knowledge, no research has examined the connection between these two factors in dental schools.

Objectives

This study examines the status of self-efficacy and educational ambiance among clinical dental students at Tehran University of Medical Sciences (TUMS) in 2018, as well as the relationship between self-efficacy and educational atmosphere.

Methods

The current cross-sectional descriptive-analytical research was carried out in 2018 at Tehran University of Medical Sciences' School of Dentistry. All third through sixth year clinical dentistry students were included in the study's participants. It was optional to take part in the research. The study protocol (IR.TUMS.DENTISTRY.REC.1397.114) was approved by the School of Dentistry Ethics Committee.

Sampling And Data Collection: With an alpha of 0.05, a beta of 0.20, an R2 of 0.1, and 16 variables without any controlled variables, 187 individuals were needed. A total of 190 clinical dentistry students (or 87% of the 216 who wanted to participate in the research) agreed to take part and complete the questionnaire. Participants' informed written permission was collected after a brief description of the research design. The Sherer Self-efficacy Scale (17) and the Dundee Ready Education Environment Measure (DREEM) (18) were then used to gauge the students' sentiments regarding their self-efficacy and the learning environment, followed by a brief questionnaire providing basic information that was completed anonymously.

Data Collection Tool: The data collection instrument had three components. The first section consisted of a general information questionnaire that included background characteristics (gender, marital status (single or married)), place of residence (with family, dorm, personal house), parents' education (classified as university education or not), and self-reported socioeconomic status (good, moderate, poor). Besides, the questionnaire included educational variables (academic year of study, acceptance rate, grade point average, grade point for the previous semester, post-dental school employment experience, and self-perceived efficacy (good, moderate, or poor)).On the national university entrance exam, a quota system is used to select students from privileged areas (province capitals and large cities: quota 1), underprivileged areas (small cities: quota 2), remote areas (quota 3), children of faculty members (quota 4) and disabled and volunteer veterans (quota 5) allowing for preferential treatment. All nominal variables with many states were transformed to those with just two. For instance, the five categories of quotas-1 to 5-were changed into 1 to 3 and 4 to 5. The explanation was that although 1-3 quotas were all accepted to the university through examination without any special benefit, 4-5 quotas were admitted via additional incentive. Therefore, there was no need for dummy variables. The second section included 17 items on a five-point Likert scale from the validated Persian version of the Sherer Self-Efficacy Scale. A sample question for measuring self-efficacy is, "When I make plans, I am confident I can make them work." To get the overall score for self-efficacy, 8 questions were rated in reverse. The overall self-efficacy score goes from 17 (the lowest level) to 85 (the highest level). The Sherer Self-Efficacy Scale has already been verified (Cronbach's alpha coefficient=0.86) and its reliability has been acknowledged (19). Professors of dentistry and medical education verified the questionnaires' content validity for the current research.

The DREEM questionnaire, which consists of 50 items on a five-point Likert scale and has been verified and deemed trustworthy in Persian (Cronbach's alpha

coefficient = 0.91) (20) as the third component, was used to assess the study's educational environment. This survey examines five crucial areas: students' perceptions of learning (PoL), perceptions of teaching (PoT), academic self-perception (ASP), perception of the environment (PoA), and social self-perception (SSP). A PoL question might be, "I am encouraged to participate during teaching sessions." The PoT question "The course teachers are knowledgeable." is an example. The extra file contains the whole questionnaire. To get the overall educational environment score, 8 questions were rated in reverse. The overall score for the educational environment goes from 50 (worst educational environment) to 250 (best educational environment). The overall rating of the educational environment was divided into five categories: non-desirable (0-50), semi-desirable (51-100), desirable (101-150), very desirable (151-200), and highly desirable (201-250). The PoL domain has twelve questions with a maximum score of 60. With a maximum score of 55, 11 questions are used to assess the PoT domain. The ASP domain is evaluated with eight questions, with a possible score of 40. The PoA domain is evaluated using 12 questions with a maximum score of 60, while the SSP domain is evaluated using 7 questions with a maximum score of 35.

Statistical Analyses: For statistical analysis, IBM SPSS version 20 (Armonk, NY: IBM Cop.) was utilized.

Kolmogorov-Smirnov was employed to verify the normality of the data distribution.

ANOVA was used to evaluate the statistical difference between three or more independent groups, and the T-test was used to compare the means of two groups.

Multiple regression analysis was utilized because dependent variables had a normal distribution depending on the values of the independent variables. Univariate linear regression analysis was used to predict the values of the dependent variables (scores of overall educational environment and its dimensions in addition to overall self-efficacy) based on the independent factors. The linear connection between the quantitative variables was assessed using Pearson correlation.

P-values<0.1 were regarded as statistically significant.

Regarding the exploratory nature of the present article and the number of participants, the p-value was set as 0.1 at the discretion of the statistical analysis expert.

Results

About half of the clinical dental students who participated in this study were female (52.6%), single (87.4%), resided in a residence (50%) and had a decent self-reported economic status (50%). The fathers of 80.5% of the pupils were college graduates. 51.1% of the students had a grade point average in the range of 16 to 16.9 out of 20.

85.5% of the students admitted to quota 2 had no prior job experience, while the acceptance rate for those students was 38.9%. Self-perceived efficacy was rated as excellent by 42.1% of students and moderate by 53.2% of students. Self-efficacy had a mean score of 57.9 (SD = 6.3), while the overall educational climate had a mean score of 158.1 (SD = 15.4).

According to demographic and educational data, Table 1 displays the mean self-efficacy and educational environment ratings. Dental students in lower years (p=0.04), those with a higher-grade point average (p=0.015), and those with greater self-perceived effectiveness (p=0.001) had higher self-efficacy scores on average. The mean score for the overall educational environment was also higher for dental students in lower years (p=0.039) and for those with a better grade point average (p=0.036).

Only grade point average and admission quota among all demographic and educational characteristics, according to a linear regression analysis, predicted self-efficacy (Table 2). For each point raised in the grade point average and each admission quota, the mean self-efficacy score dropped by 0.839 points and 0.641 points, respectively.

Among all demographic and educational variables, linear regression analysis revealed that only gender (Beta=-3.97, p=0.076) and academic year (Beta=-0.1887, p=0.061) predicted the total educational ambiance score (Table 2).

Bivariate analysis revealed no significant differences in the mean scores of most educational milieu domains based on background and educational variables, with the exception of PoL, where male (p=0.02) and married (p=0.023) subjects had a higher mean score (Table 3). Regarding PoA, pupils with a moderate socioeconomic status achieved a higher mean score (p-value = 0.033). In addition, the subjects with higher self-perceived efficacy had higher self-efficacy (p 0.0001), ASP (p = 0.006), PoA (p = 0.013), and SSP (p = 0.017) scores.

Table 1. Mean Score and Standard Deviation of Self-Efficacy* and Educational Atmosphere** According to Demographic/Educational Information Among Clinical Dental Students (N=190), 2018

Demographic variables		n	Self-efficacy		Total educational atmosphere	
			Mean (SD)	P-value****	Mean (SD)	P-value****
Gender	Male	90	58.3 (6.2)	0.385	160.3 (15.2)	0.063
	Female	100	57.5 (6.3)		156.1 (15.5)	
Marital status	Single	166	57.9 (6.4)	0.639	158.4 (15.5)	0.445
	Married	24	57.3 (4.1)		155.8 (15.4)	
Place of residence	Family home	74	58.5 (6.8)	0.308	159.1 (16.5)	0.410
	Dormitory	95	57.8 (5.9)		158.2 (15.9)	
	Single home	21	56.1 (5.0)		154.0 (7.9)	
Father's education	Non-university educated	37	57.5 (6.2)	0.659	159.9 (14.1)	0.428
	University educated	153	57.9 (6.3)		157.7 (15.8)	
Mother's education	Non-university educated	73	57.3 (5.9)	0.349	159.6 (13.7)	0.306
	University educated	117	58.2 (6.4)		157.2 (16.5)	
Self-reported economic status	Good	95	57.8 (6.1)	0.884	157.9 (14.8)	0.262
	Moderate	94	57.8 (6.3)		158.5 (16.1)	
	Poor	1	61.0 (0.0)		133.0 (0.0)	
Educational variables						
Academic year	6th	49	56.8 (5.3)	0.0407	155.2 (19.7)	0.039
	5th	51	57.6 (6.2)		155.3 (12.6)	
	4th	45	58.4 (7.1)		163.2 (11.5)	
	3rd	45	58.8 (6.2)		159.1 (15.8)	
The last semester's grade	17-20	32	58.8 (6.4)	0.380	158.2 (16.7)	0.972
	16.99 >	158	57.7 (6.2)		158.1 (15.3)	
Total average grade	17-20	28	60.5 (6.4)	0.015	163.75 (14.9)	0.036
	16.99 >	162	57.4 (6.1)		157.12 (15.5)	
Acceptance quotas***	Quota 1	51	59.3 (5.9)	0.141	158.3 (18.1)	0.879
	Quota 2	74	57.8 (5.9)		158.2 (16.5)	
	Quota 3	27	57.7 (7.4)		160.1 (14.7)	
	Quota 4	6	54.0 (6.1)		155.1 (10.7)	
	Quota 5	32	56.5 (6.2)		156.1 (8.5)	
Working experience out of dental school	Yes	27	58.1 (1.0)	0.821	155.5 (3.3)	0.359
	No	163	57.8 (0.4)		158.5 (1.1)	
Self-perceived efficacy	Good	80	59.9 (6.4)	0.001	160.3 (15.0)	0.059
	Moderate	101	56.6 (5.7)		157.1 (15.0)	
	Poor	9	54.1 (5.2)		148.3 (20.9)	

*: According to the Sherer questionnaire (20); **: According to the DREEM questionnaire (22); ***: Quota 1= lived in a big city at the time of entrance to the university, Quota 2 lived in a small city at the time of entrance to the university, Quota 3=live in a very small city or remote area at the time of entrance to the university, Quota 4= child of a faculty member, Quota 5= veterans; ****: According to results of t-test for comparing two groups and ANOVA for three or more groups.

After adjusting for the impacts of all other independent factors, female dentistry students had a total educational environment score that was 4 points lower, and switching to a higher academic year caused that score to drop by around two points.

All other categories and the overall educational environment positively linked with the student's self-efficacy, with the exception of PoT (p=0.302). Students' perception of the environment had the strongest positive correlation (highest Pearson coefficient, rho=0.351), followed by their perception of their academic performance (rho=0.291) (Table 4).

Table 2. Results of Linear Regression Analysis for Self-Efficacy* and Total Educational Atmosphere** According to Demographic/Educational Information Among Clinical Dental Students (N=190), 2018

Demographic variables	Total Self Efficacy			Total Educational Atmosphere		
	Unstandardized coefficient B***	SE	P-value[3]	Unstandardized coefficient B***	SE	P-value****
Gender	-1.18°	0.972	0.195	-3.97	2.445	0.076
Marital status	1.161	1.522	0.863	0.811	3.830	0.928
Place of residence	-.894	0.742	0.374	-2.448	1.868	0.141
Father's education	0.477	0.860	0.765	-0.449	2.164	0.556
Mother's education	-0.125	0.547	0.980	-1.256	1.376	0.337
Self-reported economic status	0.496	0.991	0.738	-1.140	2.493	0.768
Educational variables						
Academic year	-1.518	0.820	0.161	-1.887	2.064	0.061
The last semester's grade	0.693	0.784	0.340	0.161	1.974	0.483
Total average grade	-0.839	0.800	0.084	-0.952	2.012	0.358
Acceptance quotas*****	-0.641	0.369	0.055	-0.374	0.929	0.564
Working experience out of dental school	-1.314	1.416	0.616	1.274	3.563	0.532

*: According to the Sherer questionnaire (20); **: According to the DREEM questionnaire (22); ***:B was the unstandardized coefficient;;****:P-values less than 0.1 were significant; *****: all groups of acceptance quotas were divided into two main groups (1 to 3 named 1 and 4 to 5 named 2).

Table 3. Results of Linear Regression Analysis for five domains of educational Atmosphere* according to demographic/educational information among clinical dental students (N=190), 2018

Demographic variables	PoL			PoT			ASP			PoA			SSP		
	B**	SE	P***	B**	SE	P***	B**	SE	P***	B**	SE	P***	B**	SE	P***
Gender	-1.526	0.738	0.026	-0.713	0.681	0.447	-0.645	0.630	0.470	-1.269	0.812	0.185	-0.437	0.467	0.231
Marital status	-0.988	1.156	0.309	1.838	1.068	0.126	0.095	0.987	0.911	-0.278	1.273	0.596	0.811	0.731	0.846
Place of residence	-0.552	0.564	0.157	-0.375	0.521	0.709	-0.315	0.481	0.645	-0.806	0.621	0.120	-2.448	0.357	0.479
Father's education	-0.879	0.653	0.609	-0.281	0.603	0.346	-0.077	0.558	0.437	0.754	0.719	0.228	-.0449	0.413	0.744
Mother's education	0.211	0.415	0.615	-0.116	0.384	0.362	-0.273	0.335	0 .39	-0.595	0.457	0.079	-1.256	0.263	0.468
Self-reported economic status	-0.959	0.752	0.155	0.125	0.695	0.738	-0.417	0.643	0.825	-0.136	0.828	0.996	-1.140	0.476	0.387
Educational variables															
Academic year	-0.993	0.623	0.001	1.034	0.575	0.064	-0.493	0.532	0.666	-0.726	0.686	0.031	-1.219	0.394	0.532
The last semester's grade	0.041	0.596	0.814	0.171	0.550	0.672	-0.291	0.509	0.268	0.195	0.656	0.922	0.161	0.337	0.702
Total average grade	0.049	0.607	0.692	-0.380	0.561	0.563	-0.062	0.519	0.418	-0.480	0.669	0.679	-0.952	0.384	0.756
Acceptance quotas	-0.149	0.280	0.313	-0.102	0.259	0.831	-0.83	0.240	0.575	-0.160	0.309	0.331	-0.374	0.177	0.474
Working experience out of dental school	1.599	1.075	0.164	-0.390	0.993	0.732	-0.118	0.918	0.892	0.193	1.184	0.764	1.274	0.680	0.922

*: According to the DREEM Questionnaire (22), **: B was the Unstandardized Coefficient; ***: P-values less than 0.1 Were Significant. PoL: Students'. Perception of Learning; PoT: Students' Perception of Teaching; ASP: Students' Academic Self-Perception; PoA: Students' Perception of Atmosphere; SSP: Students' Social Self-Perception.

Table 4. Mean Score (and Standard Deviation) of Educational Atmosphere and its Domains, and Results of Correlation Analysis (Pearson Correlation) of Educational Atmosphere and its Domains with Self-Efficacy Among Clinical Dental Students (N=190), 2018

Demographic variables		Educational atmosphere					
		PoL	PoT	ASP	PoA	SSP	Total
Self-efficacy	Mean (SD)	35 (4.8)	35.5 (4.3)	26.1 (3.9)	38.7 (5.1)	22.8 (2.9)	158.1 (15.5)
	Max. attainable score (question number)	60 (12)	55 (11)	40 (8)	60 (12)	35 (7)	250 (50)
	RHO*	0.146	0.075	0.291	0.351	0.206	0.311
	P-value	0.044	0.302	0.001	0.001	0.004	0.001

*: Pearson correlation coefficient

PoL: students' Perception of Learning; PoT: students' Perception of Teaching; ASP: students' Academic Self-Perception; PoA: students' Perception of Atmosphere; SSP: students' Social Self-Perception.

Discussion

This research discovered that dentistry students had a highly desired (151-200) degree of self-efficacy and educational environment. According to the research, dental students' self-efficacy was significantly influenced by the teaching environment. According to our knowledge, this is the first research to examine how the educational environment affects dentistry students' self-efficacy using two widely used instruments, the DREEM and Sherer self-efficacy measures. The two tools have been utilized in various contexts in the past, such as with medical students (11). According to our main analysis, the mean self-efficacy score was greater for junior dental students and those with better grade point averages.

Self-efficacy was shown to be inversely connected with acceptance rate and grade point average in advanced analysis, which may be related to these students' initial individual skills and stronger self-efficacy at the time of university entrance.

With the exception of students' Perception of Teaching (PoT), advanced analyses in a well-fitted sample size demonstrated a substantial strong association between self-efficacy and the overall score of the educational environment and most of its dimensions. The Perception of Atmosphere (PoA) average score for the students was greater than in previous research (18, 21, 22), although it was comparable to a local report (23). Additionally, it was greater than the PoA score stated as the average for medical students at a recently founded local institution (24). This distinction between dentistry school clinics and hospitals may be the result of their different physical environments. The premise that the educational environment has a significant impact on self-efficacy is supported by the substantial correlation between the PoA and self-efficacy. Our results demonstrated a relationship between self-efficacy and the educational environment. On the other hand, students who felt more confident in their own abilities were more likely to achieve better grade point averages. Self-efficacy beliefs have an impact on students' mental health, and perceived self-efficacy has a direct impact on academic accomplishment (25). The students' motivation for accomplishment is significantly influenced by cognitive self-efficacy (26). International rankings in academic and research accomplishments are a point of competition for educational institutions all around the globe. Evaluation of the variables influencing self-efficacy in educational contexts may help with lesson design.

Boys outperformed girls in terms of overall educational climate and perception of learning (PoL), which is likely related to the differences in personality traits between male and female pupils. As a general rule, girls are exacting and stern, while guys tend to have more expansive viewpoints. The findings of a research by Sunkad et al. (2015) on 914 medical, dentistry, nursing, physiotherapy, and health students of KLE University of India were identical to the males' more favorable impression. In line with the findings of the current investigation, this study revealed that male students had a more favorable PoA than female students (21). Boys have a learning style that is independent of the educational environment, but girls have a learning style that is tied to it (27). Similar to the findings of studies on dental students in Saudi Arabia (18, 28) and Australia (26), senior students in the present study had reduced self-efficacy and educational ambiance scores. In advanced linear regression analysis, however, the relationship between self-efficacy and performance was no longer significant. As students advance to higher academic years, their experience increases, and they become involved with more real-world cases and administrative, social, and communication conditions, which may result in a

decrease in the senior students' rating of the total educational atmosphere. Self-efficacy is related to both self-oriented and other-oriented perfectionism, as previously reported. Higher levels of socially prescribed perfectionism correlate with high self-efficacy (29). In this study, students with a lower grade point average had higher self-efficacy, indicating self-directed perfectionism. This study presents an innovative method for analyzing the effect of the educational environment on the self-efficacy of clinical dental students.

In addition, the Persian versions of the utilized instruments were validated before their English counterparts. This study was limited by the large number of educational assignments given to students in clinical departments. In order to guarantee the veracity of the responses, the questionnaires were collected within two days. Thus, the pupils were able to respond to the queries calmly and without anxiety. Together with meticulous planning, identifying the strengths and limitations of clinical dental education can enhance the education and training of competent dentists.

Limitation: Despite applying the p-value of 0.1, this research has valuable implications, given that this was among the first studies in an Iranian population with its certain characteristics and the educational curriculum used in it.

Conclusion

This study revealed a correlation between dental student self-efficacy, educational ambiance, and its domains. TUMS dental students reported a moderate to high level of self-efficacy and a very desirable (151-200) level of educational ambiance. The study confirmed the considerable positive effect of the educational environment on the self-efficacy of dental students. The results can assist faculty members in designing optimal educational programs to enhance the quality of education and produce students who are empowered and responsive to the requirements of the community.

Acknowledgements: The authors are grateful to the School of Dentistry, TUMS students for their cooperation in data gathering.

Conflict of interests: The authors have no proprietary, financial, or other personal interest in any product, service, or company presented in this article.

Ethical approval: This study was conducted by all the provisions of the local human subject's oversight committee guidelines, and policies. The approval code for this study is IR.TUMS.DENTISTRY.REC.1397.114.

Funding/Support: This study was supported by the Research Center for Caries Prevention, Dentistry Research Institute, Tehran University of Medical Sciences.

References

1. Cheng Y. Academic self-efficacy and assessment. Educational Psychology. 2020; 40(4): 389-91. doi: 10.1080/01443410.2020.1755501.
2. Qian H, Yuan C. Factors Associated With Self-care Self-efficacy Among Gastric and Colorectal Cancer Patients. Cancer Nurs. 2012 May-Jun; 35(3): E22-31. doi: 10.1097/NCC.0b013e31822d7537. [PMID: 22067688]
3. Pouresmail Z, Heshmati Nabavi F, Sadeghi T, Shafiee Jafarabadi M N, Behnam Voshani H R. Correlation between adjustment and self-efficacy in patients with intestinal ostomy. Journal of Hayat 2017; 22(4): 300-11. [In Persian]
4. Riquelme A, Oporto M, Oporto J, Mendez J, Viviani P, Salech F, et al. Measuring students' perceptions of the educational climate of the new curriculum at the pontificia universidad catɔlica de chile: Performance of the spanish translation of the Dundee Ready Education Environment Measure (DREEM). Educ Health (Abingdon). 2009 May;22(1):112. [PMID: 19953435]
5. Soemantri D, Herrera C, Riquelme A. Measuring the educational environment in health professions studies: A systematic review. Med Teach. 2010; 32(12): 947-52. doi: 10.3109/01421591003686229. [PMID: 21090946]
6. Genn JM. AMEE Medical Education Guide No. 23 (Part 1): Curriculum, environment, climate, quality and change in medical education-a unifying perspective. Med Teach. 2001 Jul;23(4):337-344. doi: 10.1080/01421590120063330. [PMID: 12098379]
7. Varma R, Tiyagi E, Gupta JK. Determining the quality of educational climate across multiple undergraduate teaching sites using the DREEM inventory. BMC Med Educ. 2005 Feb 21;5(1):8. doi:10.1186/1472-6920-5-8. [PMID: 15723699] [PMCID: PMC553968]
8. Mohd Yani AA, Ahmad MS, Ngah NA, Md Sabri BA. The relationship of educational environment and preparedness to practice-perceptions of Malaysian dental graduates. Eur J Dent Educ. 2023 Aug;27(3):449-456. doi: 10.1111/eje.12826. [PMID: 35579452]
9. Curtis DA, Lind SL, Brear S, Finzen FC. The correlation of student performance in preclinical and clinical prosthodontic assessments. J Dent Educ. 2007 Mar;71(3):365-72. doi:10.1002/j.0022-0337.2007.71.3.tb04286.x. [PMID: 17389571]
10. Kalkwarf KL, Haden NK, Valachovic RW. ADEA commission on change and innovation in dental education. J Dent Educ. 2005 Oct;69(10):1085-7.doi:10.1002/j.0022-0337.2005.69.10.tb04008.x. [PMID: 16204673]
11. Miles S, Leinster SJ. Medical students' perceptions of their educational environment: expected versus actual perceptions. Med Educ. 2007 Mar;41(3):265-72. doi: 10.1111/j.1365-2929.2007.02686.x. [PMID: 17316211]
12. Çikrıkci Ö. The Effect of Self-efficacy on Student Achievement. In: Karadag E, editor. The Factors Effecting Student Achievement: Meta-Analysis of Empirical Studies. Cham: Springer International Publishing; 2017: 95-116. doi:10.1007/978-3-319-56083-0_6.
13. Myint K, See-Ziau H, Husain R, Ismail R. Dental Students' Educational Environment and Perceived Stress: The University of

Malaya Experience. Malays J Med Sci. 2016 May;23(3):49-56. [PMID: 27418869] [PMCID: PMC4934718]
14. Rahimi F, Seyed mirnasab Hs, Alamdar E, Kamali K, Khoushemehr G. Relationship Between Self-efficacy and Academic Achievements in the Students of Tehran University of Medical Sciences. Iranian Journal of Nursing Research. 2018;13(2):59-66.
15. Sherer M, Maddux JE, Mercandante B, Prentice-Dunn S, Jacobs B, Rogers RW. The Self-efficacy Scale: Construction and validation. Psychological reports. 1982;51(2):663-71. doi:10.2466/pr0.1982.51.2.663.
16. Yeturu SK, Kumar VS, Pentapati KC, Krishnan NA, Roy S, Babu RS. Students' perceptions of their educational environment in a south Indian dental school—A cross-sectional study. Journal of International Oral Health. 2022;14(5):518.
17. Roff S, McAleer S, Harden RM, Al-Qahtani M, Ahmed AU, Deza H, et al. Development and validation of the Dundee Ready Education Environment Measure (DREEM). Medical Teacher. 1997;19(4):295-9. doi:10.3109/01421599709034208.
18. Al-Saleh S, Al-Madi EM, AlMufleh B, Al-Degheishem AH. Educational environment as perceived by dental students at King Saud University. Saudi Dent J. 2018 Jul;30(3):240-249. doi: 10.1016/j.sdentj.2018.02.003. [PMID: 29942109] [PMCID: PMC6011212]
19. Rahimi Pordanjani S, Ghobari Bonab B. The effect of multiple intelligences training on general self efficacy of high school deaf students. Research in Cognitive and Behavioral Sciences. 2011;1(1):73-86.
20. Fallah kheiri Langroudi SA, Badsar AR, Hosseini Z, Rouhi M. Validation of the Persian version of the Dundee Ready Educational Environment Measure (DREEM). Research in Medical Education. 2012;4(2):24-33.
21. Sunkad MA, Javali S, Shivapur Y, Wantamutte A. Health sciences students' perception of the educational environment of KLE University, India as measured with the Dundee Ready Educational Environment Measure (DREEM). J Educ Eval Health Prof. 2015 Jun 27;12:37. doi: 10.3352/jeehp.2015.12.37. [PMID: 26268829] [PMCID: PMC4536364]
22. Tomás I, Aneiros A, Casares-de-Cal M, Quintas V, Prada-López I, Balsa-Castro C, et al. Comparing student and staff perceptions of the "educational Climate" in Spanish Dental Schools using the Dundee Ready Education Environment Measure. Eur J Dent Educ. 2018 Feb;22(1):e131-e141. doi: 10.1111/eje.12270. [PMID: 28504872]
23. Jalili Z, Sabahi-Rooy F. Evaluation of the educational environment based on the model DREEM From the perspective of students of clinical psychology of university Islamic Azad University Medical Sciences of Tehran. Strides in Development of Medical Education. 2015;11(4):464-70. [In Persian]
24. Zolfaghari SH, Bijari B. Medical students' perspective of Clinical Educational Environment of Hospitals Affiliated with Birjand University of Medical Sciences, Based on DREEM Mode. Journal of Birjand University of Medical Sciences. 2015;22(4):368-75. [In Persian]
25. Makhdoom NM. Assessment of the quality of educational climate during undergraduate clinical teaching years in the college of medicine, Taibah University. Journal of Taibah University Medical Sciences. 2009; 4(1): 42-52. doi:10.1016/S1658-3612(09)70080-0.
26. Stormon N, Ford PJ, Eley DS. DREEM-ing of dentistry: Students' perception of the academic learning environment in Australia. Eur J Dent Educ. 2019 Feb;23(1):35-41. doi: 10.1111/eje.12384. [PMID: 30022585]
27. Farajollahi M, Najafi H, Nosrati Hashi K, Najafiyan S. Relationship between learning styles and academic achievement of university students. Educ Strategy Med Sci. 2013; 6(2): 83-8. [In Persian]
28. Al-Ansari A, El Tantawi M. Predicting academic performance of dental students using perception of educational environment. J Dent Educ. 2015 Mar;79(3):337-44. doi: 10.1002/j.0022-0337.2015.79.3.tb05889.x. [PMID: 25729028]
29. Dunkley DM, Zuroff DC, Blankstein KR. Self-critical perfectionism and daily affect: Dispositional and situational influences on stress and coping. J Pers Soc Psychol. 2003 Jan; 84(1):234-52.doi:10.1037/0022-3514.84.1.234. [PMID: 12518982]