

COMPARATIVE ASSESSMENT OF STUDENTS' PERCEPTION OF THE DENTAL SCHOOL EDUCATIONAL ENVIRONMENT IN THE WEST ZONE OF TAMIL NADU: A CROSS-SECTIONAL STUDY



Dentistry

Arya Acca Varghese*

MDS, Assistant Professor, Department of Pediatric and Preventive Dentistry, Sri Ramaswamy Memorial (SRM) Kattankulathur Dental College and Hospital, SRM Institute of Science and Technology (SRMIST), Potheri, Kattankulathur 603203, Chengalpattu District, Chennai, Tamil Nadu, India *Corresponding Author

Pradeep Daniel Gainneos

MDS, Associate Professor, Department of Pediatric and Preventive Dentistry, Vinayaka Mission's Sankarachariyar Dental College, Vinayaka Mission's Research Foundation (DU), Salem, Tamil Nadu.

ABSTRACT

No previous study has been conducted to assess the perception of students studying in two different educational environments in India—Deemed and Affiliated. Using the DREEM tool, the study aimed to evaluate and compare students' opinions of the learning environment of a deemed and affiliated dental colleges in the western region of Tamil Nadu. An e-questionnaire was distributed among undergraduate students. The responses were collected and analyzed. The mean score comparisons were performed via Student's t-test and ANOVA. The level of significance was set at ≤ 0.05 . A total of 312 students participated. The total DREEM score for both colleges was more positive than negative, scoring 141/200 (70.5%) and 139/200 (69.5%), respectively, with marginally higher scores for the Deemed Institute than affiliated students. The Deemed third-year students showed higher positive perception in each aspect score of the DREEM questionnaire. However, students of both colleges pointed out specific areas as weak and needing interventions.

KEYWORDS

Educational Environment, DREEM, Deemed, Affiliated, Dental Students

BACKGROUND

"Educational environment" refers to a physical location where students study. (1) A stimulating learning environment encourages students to study independently, and any negative factors must be removed. (2) To quantitatively measure this environment, the Dundee Ready Educational Environment Measure (DREEM) tool was introduced as a 50-item questionnaire (3).

Various areas of concern exist in the educational environment of Indian dental colleges.(4) While the Indian system comprises affiliated and deemed colleges, there is limited literature on the learning environment of these colleges. (4,5) This study aimed to evaluate students' opinions of the learning environment of a deemed and an affiliated dental college in the western region of Tamil Nadu. The null hypothesis was that no significant difference is present in the perceptions of students belonging to the deemed and the affiliated dental colleges.

METHODS

Study Design and Settings

The present cross-sectional study was approved by the institutional Ethical Committee. Online consent was obtained from all the student participants before the commencement of the survey.

Sample Size

The sample size was calculated based on a previous study by Thomas et al.(6), and a minimum of 300 students were considered.

Study Participants

Third and Final-year undergraduate students were included. First and second-year students, and students who did not want to participate or filled out incomplete forms, were excluded. A total of 312 undergraduate dental students participated in the study.

Data Collection Tool

Students completed an e-questionnaire administered through Google Forms. The DREEM scores for each domain was evaluated using a five-point Likert scale, with values as: 0 = strongly disagree, 1 = disagree, 2 = neutral, 3 = agree, and 4 = strongly agree. The scores for negatively phrased items were inverted. The interpretation of the scores is as follows: (7,8,9)

Mean Total Scores

≥ 3.5	"excellent educational aspects"
3.01-3.49	"positive educational aspects"
2-3	"educational aspects to be improved"
<2	"problem areas that need intervention"

Overall Dreem Score

0-50	Very poor
51-100	Plenty of problems
101-150	More positive than negative
151-200	Excellent

Statistical Analysis

Descriptive statistical analysis was performed with IBM SPSS Version 29. For each response the mean score comparisons between the domain scores and related variables were performed via Student's t-test and ANOVA. The level of significance was set at ≤ 0.05 .

RESULTS

Of the total, 75 deemed third-years (DT), 86 deemed final-years (DF), 75 affiliated third-years (AT), and 76 affiliated final-years (AF) participated. The mean age was 21.43 ± 1.9 years.

Students' Perceptions Under Each DREEM Domain

The perception of learning and teachers were highest among the DT students and the lowest were by DF and AT students. The SPA and SSSP scores revealed minimal differences that were not significant ($p=0.156$, $p=0.613$). SASP showed lower scores in all groups except the third-year students, and the difference was statistically significant. (Table 1)

Table 1: Mean Score Across All Domains

Domain	DT (n=75)	DF (n=86)	AT (n=75)	AF (n=76)	p-value
SPL	38.09 ± 4.85	34.40 ± 5.81	34.73 ± 4.98	36.61 ± 5.40	0.00
SPT	30.97 ± 4.40	29.27 ± 5.12	27.80 ± 3.86	29.82 ± 4.89	0.00
SASP	25.48 ± 3.65	23.29 ± 4.37	23.79 ± 3.76	24.58 ± 3.63	0.003
SPA	33.88 ± 5.23	32.08 ± 6.04	32.64 ± 4.25	33.37 ± 5.55	0.156
SSSP	18.20 ± 3.46	17.64 ± 3.77	18.20 ± 2.73	18.21 ± 3.10	0.613

Students' Overall Perceptions

The DREEM overall score revealed a significant difference between DT and DF students and between AT and AF students ($p = 0.002$). (Figure 1)

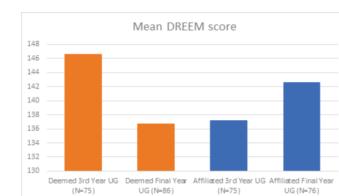


Figure 1: DREEM Overall Score of Third- and Final-year Students of DEEMED and Affiliated Dental Colleges

The AF students exhibited higher scores compared to AT students, whereas the opposite was observed in the deemed institution. The total DREEM score for both colleges was 141/200 (70.5%) and 139/200 (69.5%), respectively, with marginally higher scores for the Deemed Institute (Figure 2).

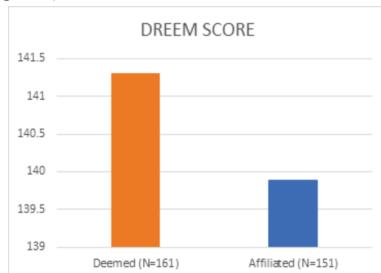


Figure 2: DREEM Overall Score of Students of Deemed vs Affiliated Dental Colleges

DISCUSSION

In the present study, the total DREEM scores for both colleges corresponded to a "more positive than negative" analogous to studies conducted in India (1,10,11) and globally (9,12). This points to a more student-centered curriculum being followed than in other subject schools (13-15).

The mean DREEM domain scores were more positive for third-year students than for final-year students at the Deemed Dental College, which is similar to findings from other studies (6,16,17). This may be due to the reduced clinical requirements, and absence of upcoming exams in clinical dentistry subjects. However, affiliated colleges presented contradictory findings in most aspects, similar to the findings of a study by Arora et al. (18). The authors of a previous study reported that this disparity may be attributed to the online educational methodologies that perhaps increased student stress and signifies the need for essential curricular adjustments concerning preclinical years. (18)

Students' Perceptions Across Different Domains

Affiliated students and deemed final-year students pointed to a more positive approach, and the Deemed third-year students indicated that teaching was highly thought of. A study in India reported a negative perception of learning by Final-year dental students (6), whereas another study reported scores at the borderline of "more positive perception" (19).

Those in the third year noted that these students highly thought of teaching, and all the other student group scores pointed to teaching as moving in the right direction. Thomas et al. (6) reported a positive perception of teachers by first-year students, whereas their final-year students reported the need for some retraining for teachers.

All the students positively perceived their confidence in passing examinations, similar to the findings of multiple other studies. (4,6,10,11,20) indicating a strong sense of confidence in their academic skills. Lower scores on the items indicated a more stressful environment and the need for intervention. Many authors have reported similar findings with increasing stress among medical students (10,21,22)

Most areas need to focus particularly on SSSP domain, which is read as "Not too bad", as was found in previous studies (17,20,23,24). Measures to facilitate student learning and interaction may enhance their social perception.

Limitations

The present study gives an overview of the various areas that need changes and highlights the need to conduct surveys to enhance the academic and clinical environment. However, the comparison between non-clinical and clinical was not made and may be considered in future with longitudinal studies.

CONCLUSION

The present study concluded both environments to show an overall positive perception. The results obtained in this study may be used for the strategic development of curricula, modifications in teaching methods, and institutional focus to achieve a more positive learning environment for students.

REFERENCES

1. Mehta A, Mehta K, Mistry N, Mehta V, Saiyad S, Sheth J. Evaluation of Educational Environment Using the Dundee Ready Educational Environment Measure-12 – Abridged version of the Dundee Ready Educational Environment Measure-50 Questionnaire among Final Year M.B.B.S. Students in a Medical College in Ahmedabad. CHRISMED J Health Res. 2023;10(3):205.
2. Veerapen K, McAleer S. Students' perception of the learning environment in a distributed medical programme. Med Educ Online. 2010;15.
3. Roff S. The Dundee Ready Educational Environment Measure (DREEM)—a generic instrument for measuring students' perceptions of undergraduate health professions curricula. Med Teach. 2005;27(4):322–5.
4. D'souza K, Rajput S, Kumar A, Aras M. Assessing dental education environment in India: Foundation for future-A systematic review. J Indian Assoc Public Health Dent. 2021;19(2):92.
5. Yeturu S, Kumar V, Pentapati K, Krishnan N, Roy S, Babu R. Students' perceptions of their educational environment in a south Indian dental school - A cross-sectional study. J Inter Oral Health. 2022;14(5):518–23.
6. Thomas BS, Abraham RR, Alexander M, Ramnarayan K. Students' perceptions regarding educational environment in an Indian dental school. Med Teach. 2009;31(5):e185–6. doi: 10.1080/01421590802516749.
7. 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). Med Teach. 1997;19(4):295–9.
8. McAleer S, Roff S. A practical guide to using the Dundee Ready Education Environment Measure (DREEM). AMEE Education Guide. 2001;23:29–33.
9. Oguntoye OO. Medical students' perceptions of the educational environment in a private medical school in Southwest Nigeria. J Educ Health Promot. 2023;12:72.
10. Methre ST, Methre TS, Borade NG. Perception of educational environment among undergraduate medical students. JMSCR 2015;3:60–6.
11. Motghare V, Kumar J, Gupta N. Undergraduate dental students' perceptions regarding educational environment in a private dental institute in India. J Indian Assoc Public Health Dent. 2018;16:30.
12. Relvas M, Cabral C, Salazar F, Lopez P, Rocha M, Costa R, et al. The Impact of COVID-19 on Educational Climate in Dental Students - A Cross Sectional Study. Eur J Edu Res. 2024;12:171–81.
13. Al-Hazimi A, Al-Hyani A, Roff S. Perceptions of the educational environment of the medical school in King Abdul Aziz University. Med Teach. 2004;26(6):570–3.
14. Mayya S, Roff S. Students' perceptions of educational environment: a comparison of academic achievers and under-achievers at kasturba medical college. Educ Health (Abingdon). 2004;17(3):280–91.
15. Idon PI, Suleiman IK, Olasoji HO. Students' Perceptions of the Educational Environment in a New Dental School in Northern Nigeria. J Educ Prac. 2015;6(8):139.
16. Awaddeh M, Alosai LA, Alqahtani M, Almotairi A, Almkhem RN, Alahmadi RA, et al. Students' perception of the educational environment at King Saud bin Abdulaziz University for health sciences using DREEM tool. BMC Med Educ. 2024;24(1):42.
17. Khan FH. Dundee ready educational environment measure: analysis in a sample of Saudi medical students. J Popl Ther Clin Pharmacol. 2024;31(1):269–76.
18. Arora G, Nawabi S, Uppal M, Javed MQ, Yakub SS, Shah MU. Dundee Ready Education Environment Measure of Dentistry: Analysis of Dental Students' Perception about Educational Environment in College of Dentistry, Mustaqbal University. J Pharm Bioallied Sci. 2021;13(Suppl 2):S1544–50.
19. Noreen K, Khan K, Nehra R. Students' perception of learning environment using dundee ready education environment measure (DREEM) inventory. Pak J Public Health. 2018;8:112–6.
20. Doshi D, Reddy BS, Karunakar P, Deshpande K. Evaluating Student's Perceptions of the Learning Environment in an Indian Dental School. J Clin Diagn Res. 2014;8(11):39–42.
21. Rezaei F, Nikkerdar N, Moghadam YHZ. Assessing Medical and Dentistry Students' Perception of Learning Environment in Kermanshah University of Medical Sciences. Educ Res Med Sci 2017;6(2).
22. Al-Samadani KH, Ahmad MS, Bhayat A, Bakeer HA, Elanbya MOG. Comparing male and female dental students' perceptions regarding their learning environment at a dental college in Northwest, Saudi Arabia. Eur J Gen Dent. 2016;5(02):80–5.
23. Stormon N, Ford PJ, Eley DS. DREEM-ing of dentistry: Students' perception of the academic learning environment in Australia. Eur J Dent Educ. 2019;23(1):35–41.
24. Jamali S, Vadiati Saberi B, Taheri M. Dental Students' Perceptions of Learning Environment in Guilan University of Medical Sciences. Inter J Sci Res Dent Med Sci. 2019;1(2):7–12.