Health Professional Students' Perception towards Learning Environment in Gitam University Campus, India: A Cross – Sectional Study

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Abstract:

Background: Health professional students are required to gain scientific and professional skills apart from high quality of educational services. Hence, it becomes imperative to take into consideration the view points and perception of the students' learning environment. **Objective**: To measure and compare the viewpoints of GITAM University Health Professional students studying in MBBS, BDS, B-Pharm, B. Sc Nursingand BPT towards their learning environment using Dundee Ready Education Environment Measure (DREEM) questionnaire. **Methodology**: A cross – sectional study was carried out using a two-part questionnaire comprising demographic information and the DREEM instrument between September 2023 – February 2024. Descriptive statistics, including means and standard deviations, were calculated for each DREEM domain, and further analysed by course, year of study, and gender.One-way ANOVA with Tukey's Post Hoc test was employed to compare the mean overall DREEM scores across courses and years of study, while, unpaired t-test was used to compare the scores by gender. **Results**: The overall DREEM score was 120.61 ± 19.86. Individual domain scores were – 'Students' perceptions of learning': 30.39 ± 6.99, 'Students' perceptions of teaching': 26.66 ± 4.41, 'Students' academic self- perceptions': 20.59 ± 4.65, 'Students' perceptions of atmosphere': 27.19 ± 6.08, and 'Students' social self-perceptions': 15.86 ± 3.35. Overall, the total DREEM score was significantly higher among nursing students (p=0.001), 1st year students (p=0.001) and males (p=0.04). **Conclusion**: The findings and evidences of the present study will hopefully provide the basis to take effective measures to improve teaching and learning environment of this University.

Key Words: DREEM, India, Learning Environment, Professional Students, University

Introduction

The environment in which students learn has a profound impact on their academic success, happiness, and motivation. It affects their ability to make informed decisions, develop a growth mindset, and ultimately, thrive in the real world. An educational setting that is supportive, resource-rich, collaborative, and challenging creates a foundation for students to excel. In this way, the educational environment serves as both a guide and a motivator, shaping not only students' achievements but also their overall trajectory in life.[1]

Educational research in health professional colleges—such as those for medicine, nursing, dentistry, pharmacy, and allied health professions—plays animportant role in influencing and modeling the future of healthcare education. It involves systematic studies that explore various aspects of teaching, learning, curriculum design, assessment methods, and the development of professional skills in healthcare students. The significance of educational research in health professional colleges is multifaceted and can have a profound impact on the quality of education, healthcare delivery, and overall patient care.[2,3,4]

In the past decade or so, more individualized and student-centric education approach is given emphasis that places the student at the center of the learning process, focusing on their unique needs, interests, learning styles, and abilities. This method emphasizes personalized experiences related to learning tailor-made to the diverse backgrounds and preferences of each student, fostering a deeper connection with the material and promoting better academic performance and overall success. [5,6]

In any educational set-up, the most important stakeholders are the students as their experiences and outcomes ultimately reflect the quality and effectiveness of the learning environment. They are the primary beneficiaries of the educational system, and their experiences, needs, and success are at the heart of what education should aim to achieve. Everything from curriculum design, teaching methods, and assessment strategies to institutional policies and practices should be tailored with students' well-being, growth, and future success in mind. [7,8]Hence, regularly assessing how students perceive their learning environment is crucial and imperative for improving problematic areas and ensuring that the educational experience remains valuable, effective and supportive.

Widely adopted across the globe, the DREEM (Dundee Ready Educational Environment Measure) serves as a comprehensive instrument for evaluating learning environments in various health-related academic institutions.[9,10,11,12,13,14,15,16,17,18,19]Roff et al. designed and validated the DREEM tool to systematically capture students' views on their learning environment, offering meaningful data for targeted educational improvements.[20,21]

On extensive literature search, we did not find any study assessing and comparing health professional students' educational environment among more than three different professional colleges. Despite the growing importance of evaluating educational environments, there is a lack of research comparing the learning experiences of students across the five health professional colleges at the GITAM University, Visakhapatnam campus, India. Through this study, we seek to identify key areas of strength as well as those requiring improvement in the educational environments of the selected colleges. Our null hypothesis was that there will not be any difference in the educational environment across courses, gender and year of study.

Material and Methods

Study Setting and Study Design:

A cross-sectional study was conducted among healthcare professional students from five programs—MBBS (Medical), BDS (Dental), B-Pharm (Pharmacy), B. Sc Nursing (Nursing) and BPT (Physiotherapy)—at GITAM University, Visakhapatnam campus, India. Data were collected between September 2023 and February 2024.

Sampling Design:

Prior permissions were taken from the respective college authorities. All the students present on the day were included. Students who were present on the day of data collection were included and asked for informed consent, with non-consenting students being excluded from the study.

Ethical Clearance

Ethical clearance was obtained from the institutional ethics committee (IEC – GDCH – 58086080123 Dt. 15.07.23).

Instrument:

Students completed a self-administered questionnaire, which was distributed at the conclusion of the lectures. The primary investigator (MK) was present during the filling of forms and any clarity needed were addressed. The questionnaire was structured into two parts: i) Demographic details and ii) Evaluation of the Educational Environment. Confidentiality and anonymity were kept in mind to obtain honest and unbiased responses. Demographic data was collected with respect to gender, year of study and course of the student. The evaluation of the educational environment was performed using the DREEM tool

Dreem Instrument:[20,21,22]

Structure of the DREEM Instrument (50 items total):

Each item scored on a 5-point Likert scale:

0 = Strongly Disagree

1 = Disagree

2 = Uncertain

3 = Agree

4 = Strongly Agree

DREEM Domains & Item Distribution:

- **Students' Perceptions of Learning (SPL) – 12 items**: 1, 7, 13, 16, 20, 22, 24, 25, 38, 44, 47, 48
  Max score: 48
- **Students' Perceptions of Teachers (SPT) – 11 items**: 2, 6, 8, 9, 18, 29, 32, 37, 39, 40, 50
  Max score: 44
- **Students' Academic Self-Perceptions (SASP) – 8 items**: 5, 10, 21, 26, 27, 31, 41, 45
  Max score: 32
- **Students' Perceptions of Atmosphere (SPA) – 12 items**: 11, 12, 17, 23, 30, 33, 34, 35, 36, 42, 43, 49
  Max score: 48
- **Students' Social Self-Perceptions (SSSP) – 7 items**: 3, 4, 14, 15, 19, 28, 46
  Max score: 28

DREEM Total Score Interpretation (out of 200):

0 – 50: Very poor

51 – 100: Plenty of problems

101 – 150: More positive than negative

151 – 200: Excellent

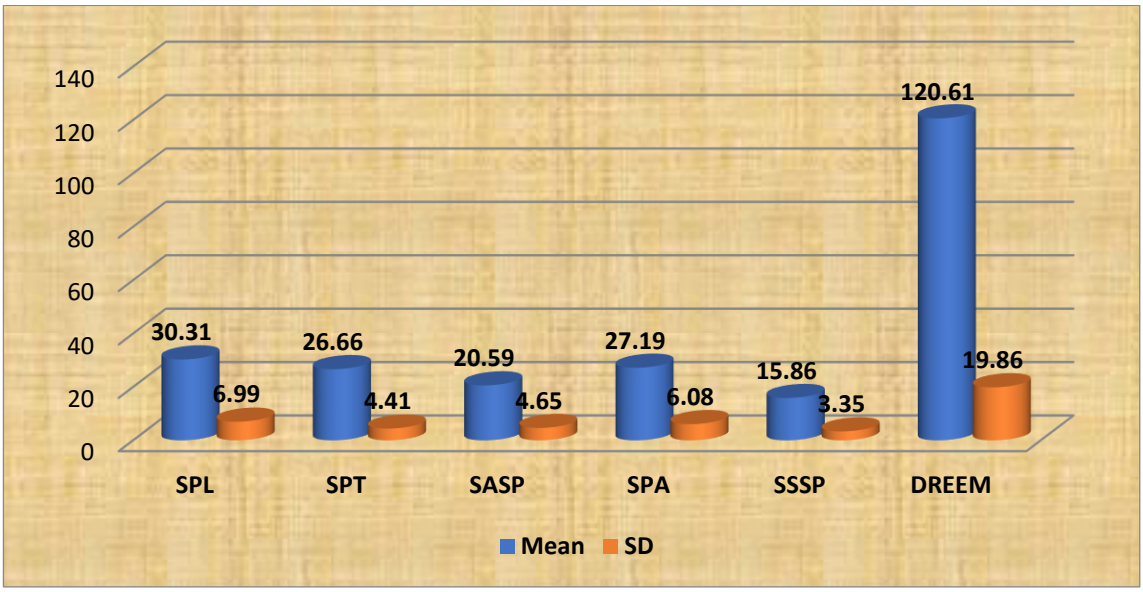
Statistical Analysis:

SPSS version 22 (SPSS Inc., Chicago, IL, USA) was used for descriptive and inferential statistics. Descriptive statistics, including mean and standard deviation, were computed for each domain, as well as by year of study, gender, and course. ANOVA with Tukey's Post Hoc test was employed to compare the mean overall DREEM scores across courses and years of study, while, unpaired t-test was used to compare the scores by gender. Level of statistical significance was set at $p \leq 0.05$.

Results:

A total of 1140 students across various courses participated in this cross – sectional study (BDS – 336, BPT – 101, MBBS – 332, Nursing – 281, Pharmacy – 90), with 816 (71.6%) females and 324 (28.4%) males.

Graph 1: Overall Mean & SD for each domain and DREEM score



Graph – 1 depicts the overall mean and SD for each domain of DREEM instrument and overall DREEM score (120.61 ±19.86)

Table 1: Comparison of mean DREEM domain scores across courses

	Colleges					p - Value	Significant differences between colleges
	MBBS (1) [Mean±SD]	BDS (2) [Mean±SD]	B-Pharm (3) [Mean±SD]	B. Sc. Nursing (4) [Mean±SD]	BPT (5) [Mean±SD]		
Students' Perceptions of Learning (SPL) Maximum: 48	28.42±8.34	30.66±6	30.76±7.08	31.85±6.26	31.64±5.9	0.001*	1:2=0.001*; 1:4 = 0.001*; 1:5 = 0.003*;
Students' Perceptions of Teachers (SPT) Maximum: 44	26.55±4.38	27.30±4.03	26.12±3.79	26.98±5.17	25.04±3.42	0.001*	2:5 = 0.001*; 4:5 = 0.006*;
Students' Academic Self-Perceptions (SASP) Maximum: 32	19.61±5.1	20.74±4.31	21.43±4.84	21.14±4.7	21.12±3.87	0.001*	1:2 = 0.02*; 1:3 = 0.001*;
Students' Perceptions of learning environment Atmosphere (SPA) Maximum: 48	25.33±6.9	27.32±5.37	29.04±5.95	28.41±6.21	27.97±4.93	0.001*	1:2=0.001*; 1:3=0.001*; 1:4 = 0.001*; 1:5 = 0.003*;
Students' Social Self-Perceptions (SSSP) Maximum: 28	15.20±3.85	16.26±3.1	16.73±3.3	16.01±3.17	15.72±3.11	0.001*	1:2=0.001*; 1:3=0.02*; 1:4 = 0.04*;

ANOVA with Post Hoc Tukey. p – value < 0.05*

Table 1 demonstrates the comparison of mean DREEM domain scores (SPL, SPT, SASP, SPA and SSSP) across the courses. MBBS students consistently had lower scores and nursing students had higher scoresacross courses among all domains and the differe3nce was found to be statistically significant ($p < 0.05$)

Table 2: Overall DREEM score (0 – 200) across courses

Course	Mean	SD	F – Value	p – Value
MBBS	115.02	21.67	10.586	0.001*
BDS	122.27	16.79		
B Pharm	123.68	20.38		
B. Sc. Nursing	124.38	20.79		
BPT	120.20	16.15		

ANOVA with Post Hoc Tukey. p – value < 0.05*

Table 3: Overall DREEM score (0 – 200) with mean difference between courses

Course		Mean Difference	p – value
MBBS	**BDS**	7.25	0.001*
	B Pharm	8.66	0.02*
	B. Sc. Nursing	9.35	0.001*
	BPT	5.25	0.126
BDS	**B Pharm**	1.40	0.97
	B. Sc. Nursing	2.10	0.67
	BPT	2.00	0.89
B Pharm	**B. Sc. Nursing**	0.70	0.99
	BPT	3.41	0.75
B. Sc. Nursing	**BPT**	4.10	0.36

ANOVA with Post Hoc Tukey. p – value < 0.05*

Overall DREEM scores across courses was depicted in table 2. Consistent with the individual domain results from table – 1, nursing students had higher overall DREEM scores with MBBS students demonstrating lower scores and the difference was found to be statistically significant ($p < 0.05$). MBBS students perceived their environment more negatively across the courses with high mean difference and was found to be statistically significant (Table – 3).

Table 4: Overall DREEM scores across year of study

Year of Study	Mean	SD	F – Value	p – Value
1st Year	125.14	17.72	10.154	0.001*
2nd Year	120.65	17.99		
3rd Year	116.82	22.83		
4th Year	116.45	20.93		
Intern (MBBS, BDS & BPT considered)	129.63	14.75		

ANOVA with Post Hoc Tukey. p – value < 0.05*

Table 5: Overall DREEM score (0 – 200) with Year of Study

Course		Mean Difference	p – value
1st Year	**2nd Year**	4.48	0.05*
	3rd Year	8.32	0.001*
	4th Year	8.69	0.001*
	Intern	3.50	0.694
2nd Year	**3rd Year**	3.83	0.19
	4th Year	4.20	0.19
	Intern	0.98	0.99
3rd Year	**4th Year**	0.36	0.99
	Intern	4.81	0.41
4th Year	**Intern**	5.18	0.37

ANOVA with Post Hoc Tukey. p – value < 0.05*

Overall DREEM scores across year of study for all courses combined was depicted in table 4. First-year students consistently expressed more favourable perceptions of their educational environment than their peers in higher years, with the difference reaching statistical significance ($p < 0.05$).

The mean difference across years of study was statistically significant ($p < 0.05$), with the largest difference observed between 4th-year and 1st-year students. (Table – 5).

Table 6: Overall DREEM scores across gender

Gender	Mean	SD	Mean Difference	p - value
Male	122.49	22.52	2.62	0.04*
Female	119.87	18.66		

Unpaired 't' test. p – value < 0.05*

Overall DREEM scores across gender for all courses combined was described in table – 6. Male students consistently rated their educational environment more positively than female students, and this difference was statistically significant ($p < 0.05$).

Discussion:

The evaluation of the learning environment in health professional institutes has been recognized as a crucial aspect of educational quality worldwide.[10, 23] Plethora of studies are conducted measuring and evaluating the educational environment of health professional students across the globe.[9,10,11,12,13,14,15,16,17,18,19,23,24,25] The use of the DREEM tool can help identify areas of concern experienced by students that may be unintentionally overlooked by educators and administrators.

A cross-sectional study was undertaken at GITAM University, Visakhapatnam, across five institutions to evaluate and compare the educational environment among health professional students using the DREEM instrument.

Previous studies have shown that higher DREEM scores correlate with enhanced academic performance and more positive student attitudes toward their program of study.[26] With a mean overall DREEM score of 120.61 ± 19.86, the findings suggest that students generally perceived the educational environment as 'more positive than negative' (Graph-1), and these results align with previous studies. [9,10,12,13,14,15,16,18,27]Unlike the present study, research conducted among Iranian medical students found that their educational environment was perceived as having 'plenty of problems'.[28] Direct comparisons of educational environments using DREEM scores across different regions are challenging, as they are influenced by a variety of institution-specific factors such as cultural context, teaching methodologies, and students' educational backgrounds, all of which shape students' perceptions.As the first evaluation of its kind on this campus, the study offers a foundational reference point for assessing future improvements in teaching approaches, faculty behaviour, and the broader educational climate.

In the current study, students rated the domains of Students' Perception of Atmosphere (SPA) and Students' Social Self-Perceptions (SSSP) as the most concerning aspects of their educational environment (Graph-1).Possible reasons for these negative perceptions may include low self-esteem, negative social experiences, a lack of emotional support within the learning environment, and various cultural influences. On the contrary, findings from other studies using the DREEM instrument revealed that students held negative perceptions of their teachers.[1,10, 29]

In the present study, the findings revealed that medical students had significantly lower DREEM scores across all domains and academic years, indicating a more negative perception of the educational environment compared to students from other courses. Several factors may contribute to the negative perception among MBBS students, including a disconnect from the demanding nature of the medical curriculum, teaching methodology, limited clinical exposure due to a shortage of patients—given that it is a relatively new institution—and the persistent anxiety regarding future career stability and settlement. On the other hand, nursing students consistently perceived their educational environment more positively across all years of study. This perception may result from a combination of a nurturing academic setting, abundant job opportunities post-graduation, and the versatility to pursue careers in various geographic areas.

The DREEM scores were higher among first-year students and decreased progressively in higher academic years, most notably among 4th-year students, with this difference being statistically significant. These findings are consistent with those reported in other studies.[4,15,16,17,19] This trend may be attributed to the increased pressures faced by students in higher academic years, including clinical requirements,

limited patient availability and allocation, variable exposure to quality clinical scenarios, and heightened peer competition.

A significant difference in overall DREEM scores was found between male and female students, with males perceiving the educational environment more positively. This result supports previous studies that have reported similar trends.[19,27]In contrast, other studies have reported that female students perceive their educational environment more positively than their male counterparts.[24,30,31]Furthermore, other studies found no significant gender differences in the perception of the educational environment.[32,33]

Our study is not without limitations. Since this study employs a cross-sectional design, it captures students' perceptions at a specific moment, making it suitable for suggesting associations but not determining cause-and-effect relationships. Nevertheless, it provides baseline data that can serve as a foundation for targeted improvements in the educational environment on our campus.

Conclusion:

The educational environment plays a vital role in shaping an individual's personality. It encompasses all aspects of institutional life and serves as a key determinant in the future success of health professionals. A positive educational environment directly influences students' learning experiences, academic achievements, motivation, and overall development. As primary stakeholders in the education system, students also serve as brand ambassadors for the growth and progress of their institutions, society, and the nation at large.

Given the ongoing evolution of teaching methodologies, it is becoming ever more crucial to assess students' perceptions of the educational environment. Systematic feedback and assessment play a crucial role in shaping a meaningful and effective curriculum. While the overall DREEM score indicated a 'more positive than negative' perception, the study pinpointed key areas needing attention, particularly in the subscales of Students' Perceptions of Atmosphere (SPA) and Students' Social Self-Perceptions (SSSP). These findings underscore the need for a transformation in both attitude and approach from the educators' side to foster a more supportive and enriching learning environment. By addressing these areas, we can enhance the educational experience and better prepare our students for their future roles as compassionate health professionals.

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