

Assessment of Educational Environment of Postgraduate Medical Students Using DREEM (Dundee Ready Education Environment Measure): A Cross-Sectional Study

Gampa Sai Preetish

ABSTRACT

Background: The educational environment plays a crucial role in shaping learning outcomes, professional development, and well-being of postgraduate medical students. Systematic evaluation of this environment provides essential feedback for improving training quality. Aims: To assess the educational environment of postgraduate medical students using the Dundee Ready Education Environment Measure (DREEM) questionnaire and to compare perceptions based on gender and year of study. Settings and Design: A single-centre, cross-sectional study conducted at J. N. Medical College, KLE Academy of Higher Education and Research, Belagavi.

Methods and Material: The study included 120 postgraduate medical students from first, second, and third years. Participants completed the validated 50-item DREEM questionnaire using a 5-point Likert scale. Negative items were reverse scored, and domain-wise as well as total scores were calculated.

Statistical Analysis: Data were analysed using Stata SE version 19. Descriptive statistics were expressed as mean \pm standard deviation. Independent samples t-test and one-way analysis of variance (ANOVA) were used to compare scores by gender and year of study, respectively. A p-value < 0.05 was considered statistically significant.

Results: The mean total DREEM score was 127.74 ± 28.42 , indicating a generally positive educational environment. Male students demonstrated marginally higher mean scores than females across most domains; however, a statistically significant gender difference was observed only in the social self-perception domain ($p = 0.010$). No significant differences were identified across academic years.

Conclusions: Postgraduate medical students perceived their educational environment positively, with social support emerging as an area requiring improvement, particularly among female students. These findings may guide targeted institutional interventions to enhance postgraduate training.

Keywords: Educational environment; DREEM; Postgraduate Medical Education; Student Perception; Cross-sectional study, MeSH Terms: Educational Measurement; Learning Environment; Medical Education, Graduate; Students, Medical

INTRODUCTION

The educational environment encompasses physical, social, and academic factors that influence student learning, satisfaction, and professional development. In postgraduate medical education, learners face increasing clinical responsibilities, academic expectations, and psychosocial stressors, making the quality of the educational climate

particularly important. [1] [15] The Dundee Ready Education Environment Measure (DREEM) questionnaire is a globally validated instrument designed to assess learners' perceptions across five domains: perceptions of learning, perceptions of teachers, academic self-perception, perceptions of atmosphere, and social self-perception. [4] Despite its widespread use in undergraduate settings, evidence regarding postgraduate educational environments remains limited, especially in the Indian context. [5] This study aimed to assess the educational environment of postgraduate medical students at a tertiary care teaching institution and to identify variations based on gender and year of study.

MATERIALS AND METHODS

Study Design and Participants

A cross-sectional study was conducted over four months involving 120 postgraduate medical students from 1st, 2nd, and 3rd years at J. N. Medical College, KLE University, Belagavi. Universal sampling included all students who consented.

Data Collection Tool

The DREEM questionnaire, comprising 50 items rated on a 5-point Likert scale, was administered to assess students' perceptions of the educational environment across five domains. [4] Negative items were reverse scored. The total score ranges from 0 to 200, with higher scores indicating a more positive environment.

Procedure

Prior to data collection, ethical clearance was obtained from the Institutional Ethics Committee. Participants provided with detailed information about the study objectives, procedures, potential risks, and benefits.

Informed consent obtained electronically via Google Forms. The consent form embedded within the Google Form clearly explain the purpose of the study, confidentiality measures, voluntary participation, and the right to withdraw at any time

3rd year Postgraduate, Department of Pharmacology KAHER's Jawaharlal Nehru Medical College, Belagavi

Corresponding author: Dr. Anupama M Gudappanavar, Associate Professor, Department of Pharmacology KAHER's Jawaharlal Nehru Medical College, Belagavi

How to cite this article: Gampa Sai Preetish. Assessment of Educational Environment of Postgraduate Medical Students Using DREEM (Dundee Ready Education Environment Measure): A Cross-Sectional Study. International Journal of Contemporary Medical Research 2025;12(12):L1-L4.



without any penalty. Participants must indicate their consent by selecting a mandatory checkbox before proceeding to answer the questionnaire. This digital consent process ensures convenience, ease of data capture, and maintains compliance with ethical guidelines for informed consent.

The study was conducted in accordance with the Declaration of Helsinki.

The DREEM questionnaire administered electronically through the same Google Forms platform, allowing participants to complete it at their convenience within the study period. Data collected via the online method has been secured, stored and accessible only to the study investigators. This approach leverages the widespread availability of internet access among postgraduate students and facilitates efficient data collection while preserving participant autonomy and confidentiality.

STATISTICAL ANALYSIS

Data were analysed using Stata SE version 19. Descriptive statistics (means, SDs) summarized scores. Independent t-tests compared gender differences, and one-way ANOVA evaluated differences across years. Statistical significance was defined as $p < 0.05$.

Demographics

Among 120 participants, 66 (55%) were males and 54 (45%) females. The distribution by year was 19 (15.8%) first-year, 41 (34.2%) second-year, and 60 (50%) third-year students (Table 1).

DREEM Domain Scores

The total mean DREEM score was 127.74 ± 28.42 , indicating a generally positive perception of the educational environment (Table 2). The highest domain score was for learning perception (30.8 ± 5.58), followed by perception of teachers (30.17 ± 8.24) and academic self-perception (21.08 ± 4.26).

Gender Differences

Mean scores were slightly higher in males for all domains except social self-perception, where females scored lower (15.89 ± 6.25 versus 18.5 ± 4.16 ; $p = 0.010$) (Table 2).

Year-wise Differences

No statistically significant differences were noted in domain scores across academic years ($p > 0.05$) (Table 3).

DISCUSSION

This study evaluated postgraduate medical students'

sex	2021	2022	2023	Total
Male	11 (57.9 %)	23 (56.1%)	32 (53.3%)	66 (55.0%)
Female	8 (42.1%)	18 (43.9%)	28 (46.7%)	54 (45.0%)
Total	19	41	60	120

Table 1: Distribution of study participants by sex and year of study (2021–2023). Values are presented as number of students (percentage).

Domains	Total Students (120) Mean \pm SD	Male (66) Mean \pm SD	Female (54) Mean \pm SD	test statistic	p-value
Students' Perceptions of Learning (SPL)	30.8 ± 5.58	31.55 ± 4.68	29.89 ± 6.44	1.58	0.117
Students' Perceptions of Teachers (SPT)	30.17 ± 8.24	31.23 ± 6.41	28.87 ± 9.95	1.50	0.136
Students' Academic Self-Perceptions (SASP)	21.08 ± 4.26	21.59 ± 3.6	20.44 ± 4.91	1.47	0.143
Students' Perceptions of Atmosphere (SPA)	28.38 ± 7.89	29.27 ± 6.73	27.28 ± 9.05	1.38	0.169
Students' Social Self-Perceptions (SSSP)	17.33 ± 5.34	18.5 ± 4.16	15.89 ± 6.25	2.63	0.010
Total	127.74 ± 28.42	132.14 ± 21.97	122.37 ± 34.18	1.82	0.073

Mean scores \pm standard deviation (SD) of DREEM domains and total scores among postgraduate medical students (n=120) with gender-wise comparison using independent samples t-test. Significant difference observed in Social Self-Perception domain ($p = 0.010$). SPL: Students' Perceptions of Learning; SPT: Students' Perceptions of Teachers; SASP: Students' Academic Self-Perceptions; SPA: Students' Perceptions of Atmosphere; SSSP: Students' Social Self-Perceptions.

Table-2: Mean DREEM domain scores among postgraduate medical students with gender-wise comparison

Domains	1st Year (120) Mean \pm SD	2nd Year (66) Mean \pm SD	3rd Year (54) Mean \pm SD	test statistic	p-value
Students' Perceptions of Learning (SPL)	31.95 ± 5.82	30.93 ± 5.06	30.35 ± 5.87	0.604	0.549
Students' Perceptions of Teachers (SPT)	29.63 ± 7.62	31.05 ± 8.56	29.73 ± 8.29	0.354	0.703
Students' Academic Self-Perceptions (SASP)	21.05 ± 5.09	21.2 ± 3.98	21 ± 4.24	0.025	0.975
Students' Perceptions of Atmosphere (SPA)	29.16 ± 8.54	28.41 ± 7.25	28.1 ± 8.21	0.129	0.879
Students' Social Self-Perceptions (SSSP)	17.21 ± 5.48	17.61 ± 5.28	17.17 ± 5.42	0.088	0.916
Total	129 ± 29.89	129.2 ± 27.68	126.35 ± 28.86	0.142	0.868

No statistically significant differences were observed across years (one-way ANOVA). SPL: Students' Perceptions of Learning; SPT: Students' Perceptions of Teachers; SASP: Students' Academic Self-Perceptions; SPA: Students' Perceptions of Atmosphere; SSSP: Students' Social Self-Perceptions.

Table-3: Comparison of mean DREEM domain scores \pm SD by year of study among postgraduate students (1st, 2nd, 3rd year).

		Male		Female		Total	
		n1	%	n1	%	n1	%
Perception of Learning	0-12, Very Poor	0	0.0	0	0.0	0	0.0
	13-24, Teaching is viewed Negatively	6	9.1	9	16.7	15	12.5
	25-36, Positive Perception	54	81.8	36	66.7	90	75.0
	37+, Teaching Highly thought of	6	9.1	9	16.7	15	12.5
Perceptions of Teachers	0-11, Abysmal	0	0.0	9	16.7	9	7.5
	12-22, In Need Retraining	3	4.5	3	5.6	6	5.0
	23-33, Moving in Right Direction	45	68.2	22	40.7	67	55.8
	34+, Model Teachers	18	27.3	20	37.0	38	31.7
Academic Self Perception	0-8, Feeling Total Failure	0	0.0	3	5.6	3	2.5
	9-16, Many Negative Aspects	9	13.6	3	5.6	12	10.0
	17-24, Feeling More Positive	48	72.7	42	77.8	90	75.0
	25+, Confident	9	13.6	6	11.1	15	12.5
Perceptions of Atmosphere	0-12, Terrible Environment	3	4.5	6	11.1	9	7.5
	13-24, Many Issues Need Changing	9	13.6	9	16.7	18	15.0
	25-36, Positive Attitude	48	72.7	36	66.7	84	70.0
	37+, Good Feeling Overall	6	9.1	3	5.6	9	7.5
Social Self-Perceptions	0-7, Miserable	0	0.0	3	5.6	3	2.5
	8-14, Not a Nice Place	12	18.2	12	22.2	24	20.0
	15-21, Not too Bad	39	59.1	30	55.6	69	57.5
	22+, Very Good Socially	15	22.7	9	16.7	24	20.0
Total Score	0-50, Very Poor	0	0.0	3	5.6	3	2.5
	51-100, Plenty of Problem	6	9.1	6	11.1	12	10.0
	101-150, More Positive than Negative	48	72.7	36	66.7	84	70.0
	151+, Excellent	12	18.2	9	16.7	21	17.5

Percentages indicate the proportion of male and female respondents falling in specified perception categories from "Very Poor" to "Excellent".

Table-4: Categorical distribution of postgraduate students' perception levels in DREEM subdomains by sex.

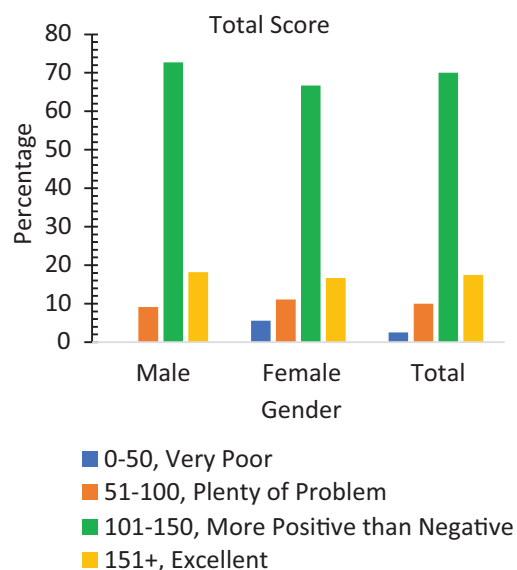


Figure-1: Percentage distribution of total DREEM scores among postgraduate medical students by gender. Categories range from "Very Poor" to "Excellent."

perceptions using the DREEM instrument. The overall positive score (127.74 ± 28.42) aligns with similar research conducted in undergraduate cohorts, where scores between 120 and 140 represent favourable learning environments. [5] The highest score in the learning domain reflects students' appreciation of the quality and relevance of educational content, consistent with studies from India and Malaysia. [1]

[2] [9] The favourable perception of teachers corroborates findings by Patil and Chaudhari, who noted effective teaching attributed to knowledgeable faculty and constructive feedback. [2]

Lower scores in social self-perception highlight an area for improvement, particularly among female students. This finding parallels Rehman et al., who reported challenges in peer support and social integration for female medical trainees. [3] Targeted mentorship and counselling programmes may alleviate these issues and enhance student well-being.

Unlike some studies reporting significant year-wise variations, our results indicate a stable perception throughout postgraduate years. This stability suggests consistent educational quality but also flags the need to continuously support students facing clinical pressures, as highlighted by Alam et al. [12]

The domain of academic self-perception, while satisfactory, was lower compared to perceptions of learning and teachers. This mirrors international trends where student self-confidence is influenced by workload and clinical demands. [11] [15] Implementation of stress management and academic skills workshops could be beneficial.

Limitations of the Study

The study was conducted at a single institution, which may limit generalisability of the findings. Additionally, the cross-sectional design precludes assessment of temporal changes in perceptions.

CONCLUSION

Postgraduate medical students at our institution perceive their educational environment positively, particularly regarding teaching and learning quality. Social support for students, especially females, requires enhancement. These insights should inform institutional policies aimed at improving postgraduate training experiences and outcomes.

ACKNOWLEDGEMENTS

Nil.

REFERENCES

- Gudadappanavar AM, Jabannavar BV, Shukla G. Assessment of educational environment of undergraduate medical students using DREEM (Dundee Ready Education Environment Measure) questionnaire—A cross-sectional study. *Int J Med Sci Educ.* 2018;5(1):132-139.
- Patil AA, Chaudhari VL. Students' perception of the educational environment in medical college: a study based on DREEM questionnaire. *Korean J Med Educ.* 2016;28(3):281-288.
- Rehman R, Ghias K, Fatima SS, Hussain M, Alam F. Dream of a conducive learning environment: One DREEM for all medical students! *J Pak Med Assoc.* 2017;67(1):44-50.
- Roff S, McAleer S, Skinner A. Development and validation of an instrument to measure the postgraduate clinical learning and teaching educational environment for hospital-based junior doctors in the UK. *Med Teach.* 2005;27(4):326-331.
- Miles S, Leinster SJ. The Dundee Ready Education Environment Measure (DREEM): a review of its adoption and use. *Med Teach.* 2012;34(9):620-634.
- Kohli V, Dhaliwal U. Medical students' perception of the educational environment in a medical college in India: a cross-sectional study using DREEM. *J Educ Eval Health Prof.* 2013;10:5.
- Salam A, Yousuf R, Bakar SMA, Haque M. Stress among Medical Students in Malaysia: A Systematic Review. *Int Med J.* 2013;20:649-55.
- Damke S, Deshpande VK. Evaluation of Medical Undergraduate Students' Perception of their Educational Environment - Only DREEM-ing is Not Sufficient. *Paripex-Indian J Res.* 2016;5(3):72-75.
- Arzuman H, Yusoff MS, Chit SP. Big sib students' perceptions of the educational environment at the school of medical sciences, Universiti Sains Malaysia, using Dundee Ready Educational Environment Measure (DREEM) Inventory. *Malays J Med Sci.* 2010;17(1):40-47.
- Unnikrishnan B, Rekha T, Mithra PP, Kumar N, Reshmi B. Perceptions of medical students about their educational environment in community medicine in a medical college of coastal Karnataka. *Indian J Community Med.* 2012;37(2):130-132.
- Al Qahtani MF. Stress and Coping Strategies among Medical Students in Saudi Arabia. *IOSR J Nurs Health Sci.* 2016;5(2):64-71.
- Alam B, Ahsan F, Haq A, et al. Year-wise DREEM scores: Insight into medical education climate. *J Pak*

Med Assoc. 2018;68(7):1071-5.

- Park KH, Park JH, Kim S, et al. Students' perception of the educational environment of medical schools in Korea: findings from a nationwide survey. *Korean J Med Educ.* 2015;27(2):117-130.
- Rezaee R, Mahdavinezhad M, Najafi A. Relationship between the educational environment and academic achievement of medical students. *Iran J Med Educ.* 2014;14(2):100-108.
- Yusoff MSB, Rahim AFA, Baba AA, et al. Stress, stressors and coping strategies among Malaysian medical students. *Educ Med J.* 2013;5(1):37-45.

Source of Support: Nil; **Conflict of Interest:** None

Submitted: 28-10-2025; **Accepted:** 24-11-2025; **Published:** 30-12-2025