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# EDUCATIONAL ENVIRONMENT AMONG NURSING STUDENTS: A LITERATURE REVIEW

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**Abstract**

**Background:** The educational environment shapes nursing students' satisfaction, engagement and academic *performance, yet little is known about how it differs between public and private nursing institutions in Pakistan.*

***Objective:*** *To review how students in health professions perceive their educational environment, as measured by the Dundee Ready Education Environment Measure (DREEM), and to identify gaps that justify a comparative study of public and private nursing institutions in Karachi.*

***Methods:*** *A narrative review following PRISMA 2020 reporting principles searched Science Direct, CINAHL and Research4Life for studies using the DREEM among nursing and other health-professions students. 25 studies were included and synthesised thematically.*

***Findings:*** *Overall mean DREEM scores ranged from about 90 to 145 out of 200, with most studies falling in the "more positive than negative" band (101–150). Social self-perception was repeatedly the weakest domain, while perception of teachers and teaching was low in several Pakistani studies. Junior students and female students often reported more positive perceptions, and higher DREEM scores were associated with better academic performance. The single sector comparison identified, among Punjab medical colleges, found no difference between public and private institutions, although both environments were less than ideal.*

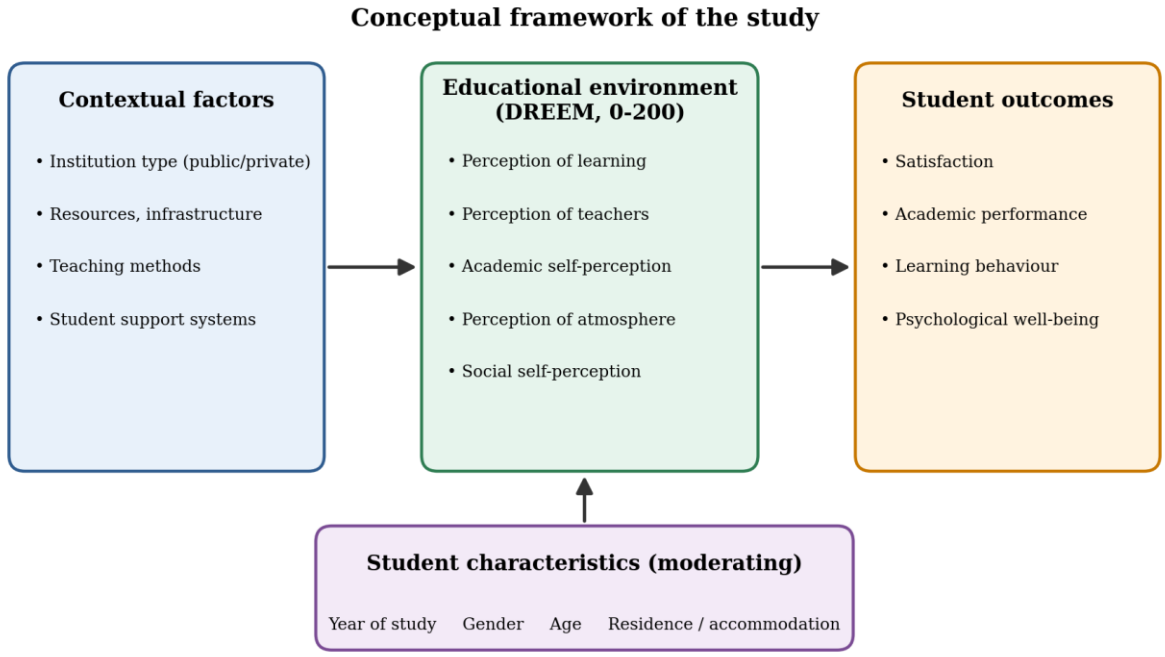
***Conclusion:*** *Nursing students generally perceive their environment favorably, but social and teaching-related gaps persist. No study was identified that directly compares public and private nursing*

*institutions, which is the key gap for future research and for evidence-based institutional reform.*

## 1.INTRODUCTION

The learning environment is one of the main factors that determine the quality of undergraduate education, and this is especially true in nursing. It covers the conditions and climate in which students study: the academic workload, the competence of teachers, how students and staff interact in class, the relationships among people on campus, and the physical and emotional atmosphere of the institution. When this environment is supportive, teaching, learning, and academic and social performance all improve; when it is poor, students tend to experience stress and disengagement, and their outcomes suffer (Kassab et al., 2024).

The Dundee Ready Education Environment Measure (DREEM) was designed to assess this environment. It has 50 items, a maximum score of 200, and covers five domains: perception of learning, perception of teachers, academic self-perception, perception of atmosphere, and social self-perception (Roff et al., 1997). Research that has applied the DREEM to nursing students in Sri Lanka, Ethiopia, and other countries mostly finds that students view their environment more positively than negatively (Jayaweera et al., 2021; Fego et al., 2020; Hussein et al., 2023). Public and private institutions, however, are not equal in their resources, infrastructure, and student support, and such differences may influence how students experience their education.




## 2. Methodology

### 2.1 Search strategy

The review was reported in line with the PRISMA 2020 guideline. Three databases were searched: Science Direct, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Research4Life. The following search string was applied: ("educational environment" OR "learning environment") AND ("nursing students") AND ("public" OR "private" OR "government") AND ("DREEM" OR "Dundee

Ready Education Environment Measure"). To broaden the search, the main concepts were supplemented with related terms, including nursing education, education climate, and academic environment.

**2.2 Inclusion and Exclusion Criterion**

***Table 1: Inclusion and Exclusion Criteria for the Literature Review***

| Criteria | Inclusion | Exclusion |
|---|---|---|
| Population | Nursing students; other health-professions students (medical, paramedical, dental, pharmacy, rehabilitation) | Non-Nursing student populations (faculty, practicing nurses, patients) |
| Tool / outcome | Studies that used the DREEM to measure perception of the educational environment | Studies that used other tools only, or did not report DREEM scores |
| Study design | Original empirical studies (mostly cross-sectional) | Commentaries, editorials, letters and opinion pieces |
| Setting | Studies from any country, including public or private institutions | Studies with no information on the institution or setting |
| Availability | Full-text articles | Articles whose full text could not be retrieved |
| Relevance | Studies that match the key search terms (educational/learning environment, nursing students, DREEM) | Studies irrelevant to the key search terms |
| Language | English [confirm] | Non-English [confirm] |
| Publication date | [Add window, e.g. 2016-2025; confirm] | Outside the window [confirm] |

**3. Literature Review**

**3.1 Students' Perception of the Learning Environment**

Jayaweera et al. (2021) surveyed 161 final-year Bachelor of Science in Nursing students in state universities in Sri Lanka. The overall DREEM score was 127.1 ± 14.3. The highest domain mean was 31.1 ± 3.9, and the lowest was 16.4 ± 3.1. A significant group effect between universities was found for the perception of learning and perception of teachers' domains, but not for the remaining domains. The authors concluded that these findings should guide changes in teaching approaches to improve teaching quality and learner engagement, and that greater support within the educational environment and a more positive atmosphere could raise satisfaction with learning.

Alfakhry et al. (2023) assessed teaching and learning in the Bachelor of Pharmacy programme at Damascus University, Syria, against international DREEM benchmarks. Of the 269 students who completed the questionnaire, representing roughly 6.7% of the student population, the mean DREEM score was 89.8 ± 32.1 out of 200. Older students scored significantly lower than junior students.

Chaudhary and Bharti (2025) surveyed 425 medical, paramedical and dental students in India to measure the institutional climate and identify areas for improvement. The total DREEM score was 117.14, and

paramedical students reported greater satisfaction than medical and dental students. Domain scores indicated a positive perception of learning (24.77), a positive perception of course organisers (29.26), a moderately positive academic self-perception (21.51), a favourable perception of atmosphere (27.59) and a relatively favourable social self-perception (15.62).
Gedamu et al. (2024) evaluated the educational atmosphere among 323 undergraduate medical students at Jimma University Medical Centre, Ethiopia. The mean DREEM score was 111.35 ± 13.67 out of 200, and female students scored markedly higher than male students. First-year students perceived the environment more favorably than senior students. Overall perceptions were positive, but many items across all five domains were judged to need substantial improvement.

**3.2 Educational Environment and Academic Performance**
D'Souza et al. (2019) studied 252 nursing students in India, examining the relationship between the educational environment, learning approaches and academic performance. The mean DREEM score was 134.7 out of 200, indicating a favourable perception of the educational environment. DREEM scores were moderately and positively correlated with university achievement ($r_s = 0.348$, $p = 0.001$), and deep and strategic learning approaches showed a weak positive correlation with academic outcomes.
Prashanth and Ismail (2018) used the DREEM to compare perceptions of the educational environment between medical undergraduates and interns in Oman. Of 737 eligible participants, 418 completed the survey (response rate 56.7%). The mean total DREEM score was 130.75 ± 12.69. Interns scored higher than undergraduates (133.00 ± 17.64 vs 128.50 ± 15.53), although this difference was not statistically significant ($p = 0.326$). Interns did, however, score significantly higher on perception of learning (66.7% vs 58.3%, $p = 0.028$) and on a second subscale (75% vs 68.2%, $p = 0.038$). Perception of atmosphere had the lowest mean score in both groups.

**3.3 Perception of the Educational Environment Among Nursing Students of Different Institutes**
A study conducted in Nepal in 2020 by (Garbuja, Rana, Thapa, & Rana, 2020), with a total sample size of 190, aimed to assess students' perceptions of the educational setups of two competing medical institutes. The result is that the Institute of Medical Sciences had 98 participants (51.6%), and the Lumbini Medical Institute and Teaching Hospital had 92 participants (48.4%). The average results for educational environment perceptions were 142.13±14.90 (74.64%) and 144.34±15.59 (76.14%) in the two centers, indicating more positive perceptions. Only the accommodation type showed statistical significance to students' perceptions of the teaching staff.

**3.4 Students' Perception of the Educational Atmosphere**
A study conducted in Saudi Arabia in 2024 by ( L.H. Al Fryan,M.I.Shomo,& I, . Bani, 2024). The total sample size was 321 students enrolled in rehabilitation sciences. This study aims to assess students' perceptions of the educational environment at Princess Nourah University, using the Dundee Ready Education Environment Assessment Tools. The results, based on the DREEM inventory score of 113.84 out of 200, suggest that the students had a reasonable DREEM outlook. As noted earlier, the subscale scores also showed that 'Student Perceptions of Atmosphere' (SPOA) was the most positively evaluated dimension, underscoring positive perceptions of the environment. In contrast, SSSP was the least positively evaluated, indicating possible hitches in attention to self-image.
A study conducted in India in 2024 by ( chhatriwala, patel, shah, & Madhu). The total sample size was 86 medical first-year students. This study aims to assess the views of first-year MBBS students at Pramukh Swami Medical Institute (PSMC) on their learning environment and identify its positive and negative aspects. DREEM total mean score, which is 145 ± 11.45 out of 200, indicates a relatively constructive learning atmosphere. Subscale scores were SPL (37 ± 2.7), SPT (30 ± 1.8), SAP (23 ± 2), SPA (35 ± 3), and SSP (20 ± 2). Gender-based analysis revealed statistically significant variations in SPT, SPA, and SSP scores; females reported higher satisfaction in certain areas. To enhance student satisfaction and academic performance, we should address SPT and SSP. The gaps mentioned above could be closed by implementing peer mentorship programs along with teacher training workshops. Active assessment with DREEM can assist in continuous support.

A study conducted in Iran in 2021 by (Mohammadi et al.,2024) involved a total sample size of 300 paramedical students. This study aimed to gain insights into learners' perceptions of the educational atmosphere at the Paramedical Faculty of Ilam University of Medical Sciences. The results show that the sample comprises 166 female and 134 male students, with ages ranging from 24.68 years to 74.68 years and a standard deviation of 7.837 years. The average perception of the educational environment was 112.34, with a standard deviation of 24.63, which is considered to be moderate. Some factors, such as marital status, education attained, age, and the academic semester, significantly explained students' perceptions of the educational environment (P≤0.05). About 20% of the questionnaire items fell under the "problematic" category, while the remaining items "need attention."

**3.5 Educational Environment in Public Institutions**

Irum et al. (2018) assessed preclinical medical students' perceptions of the learning environment in a public medical college in Punjab, Pakistan, and compared the DREEM scores with those reported earlier. The overall score was 113.68, indicating a positive educational environment. Subscale means were 26.65 ± 10.24 for perception of learning, 26.63 ± 10.18 for perception of teachers, 17.17 ± 6.73 for academic self-perception, 26.89 ± 10.89 for perception of atmosphere and 16.34 ± 6.70 for social self-perception. Scores had improved relative to earlier published figures from the same institution, but several areas still required improvement.

Costa et al. (2021) examined perceptions of the learning environment among multiprofessional residency students at a university hospital in central-western Brazil. Domain percentage scores were lowest for learning (37.91%), followed by social self-perception (43.78%), atmosphere (45.29%), academic self-perception (46.25%) and teachers (47.95%). First-year residents held significantly more negative perceptions than second-year residents in the learning ($p < 0.048$), teaching ($p < 0.01$) and academic ($p < 0.006$) domains. The total score was 94.88 out of 200 for second-year residents and 80.13 for first-year residents.

Kaneez et al. (2021) evaluated the educational environment at a public-sector medical institute in Pakistan and examined its correlation with academic performance. The mean DREEM score was 98.32 out of 200, indicating an environment with many problems. Academic self-perception scored highest (16.97/32, 53%), and perception of teachers lowest (20.07/44, 45.5%). Scores differed significantly across academic years ($p < 0.001$), from 86.4 in the second year to 110.22 in the fourth year. The total DREEM score was significantly correlated with academic performance ($r = 0.661$, $p < 0.01$), and a linear regression model relating DREEM scores to recent professional examination results was statistically significant.

Fego et al. (2020) evaluated nursing students' perceptions of their educational environment, and the factors associated with them, in public universities in southwest Ethiopia. Among 422 students, the mean DREEM score was 124.76 out of 200, indicating a somewhat positive perception. Subscale means were 31.64/48 for perception of learning, 25.4/44 for perception of teachers, 22.52/32 for academic self-perception, 29.17/48 for perception of atmosphere and 16.08/28 for social self-perception. Multiple linear regression showed that year of study, support system, learning facilities, motivation to learn, satisfaction, academic standing, gender and marital status were significantly associated with perceptions of the environment.

**3.6 Students' Perception of the Educational Environment in the Private Sector**

Farooq et al. (2018) assessed nursing and medical students' perceptions of their educational environment in a private-sector institution in Pakistan. With a response rate of 84.1%, the mean DREEM score was 126 ± 20.3. Nursing students rated the environment significantly higher than medical students (127.3 ± 19.3 vs 124.6 ± 21.3; $p = 0.027$). Medical students scored higher on perception of atmosphere, whereas nursing students scored highest on academic self-perception. Perception of teachers was rated significantly lower than the other domains.

## 4. Discussion:

Across settings, overall DREEM scores most often fell in the "more positive than negative" range, consistent with the global literature, but with considerable variation between countries and institution types. Three patterns recur. First, social self-perception is frequently the weakest domain, particularly among nursing students, suggesting that students' sense of belonging, support and social life deserves explicit attention. Second, perception of teachers and teaching was low in several Pakistani cohorts (Farooq et al., 2018a; Kaneez et al., 2021), although it appeared comparatively stable across other settings. Third, junior students and female students frequently reported more favourable perceptions, while senior students were more critical in several studies.

Because the included studies differ in country, programme, sampling and analysis, the scores in Table 1 cannot be compared statistically; apparent differences between public and private institutions should be treated as hypotheses. In particular, Pakistani nursing studies identified here come from private institutions (Victor et al., 2016; Farooq et al., 2018a, 2018b), while public-sector evidence is largely medical (Kaneez et al., 2021; Shumaila et al., 2018).

## 5. Limitations

This review has several limitations that should be considered when interpreting its findings. It is a narrative review based on a limited set of databases and restricted to full-text articles in English, so relevant studies may have been missed. The included studies were mostly cross-sectional, relied on self-reported perceptions, and differed in country, programme, sampling and analysis, which prevents statistical comparison of their scores. Some studies also pre-date the search window or reported incomplete data. Most importantly, no study directly compared public and private nursing institutions, and the Pakistani nursing evidence comes largely from private institutions, while public-sector evidence is mainly from medical education.

## 6. Future Directions

Future research should conduct multicentre studies that compare public and private nursing institutions at the same time, using standardised analysis and reporting such as domain-wise scores, medians with interquartile ranges, and response rates. Longitudinal designs are needed to show whether the lower scores among senior students reflect change over time or differences between batches. Mixed-methods approaches that combine the DREEM with interviews or focus groups would help explain why students perceive their environment as they do, particularly in the social and teaching domains, which scored lowest in several studies. Finally, studies should examine how the educational environment relates to academic performance, stress and clinical competence, and test whether interventions such as faculty development and peer mentoring improve DREEM scores.

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**PRISMA Chart**

