Perceptions of Educational Environment among Nursing Undergraduates at the Faculty of Nursing, University of Colombo, Sri Lanka

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──────── **ABSTRACT** ────────

The educational environment is recognised as a key determinant of the learning process, and it further affects student motivation and study engagement. The study aimed to assess nursing students' perception of the educational environment at the Faculty of Nursing, University of Colombo, Sri Lanka. The study was conducted solely as a descriptive cross-sectional study among 243 nursing undergraduates at the Faculty of Nursing, University of Colombo, Sri Lanka. The Dundee Ready Educational Environment Measure (DREEM) was used to assess students' perceptions of learning and teaching, their academic self-perception, the atmosphere, and social self-perception. The mean age of the study sample was 23.07 ± 1.09 and the majority of the participants (79.01%) were female (79.01%). The overall DREEM score scored by the sample was 128.46 ± 22.61. The males scored higher (133.59) than the females (127.09). The highest-scoring sub-domain was "student perception of learning" (32.28 ± 6.87), and the lowest-scoring sub-domain was "student social self-perception" (17.51 ± 3.21). Gender has significantly influenced the "perception of teachers" ($p = 0.02$) and "perception of atmosphere" ($p = 0.02$), where males scored more than females. Overall, the undergraduates of the Faculty of Nursing had a positive view of their educational environment. The key aspects related to students' academic self-perception and their learning atmosphere need to be further assessed. The study results provided valuable insights into areas of strength and areas needing improvement. Institutions can use these results to implement changes that enhance the learning environment, teaching methods, and support systems for students.

Keywords: *DREEM, Educational environment, Nursing student, Nursing education, Faculty of Nursing, Sri Lanka*

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INTRODUCTION

The educational environment (EE) is recognised as an essential determinant of the quality of the education programme (1). The quality of the educational environment also significantly influences teaching and learning considerations, ultimately shaping student outcomes as professionals (2). The educational environment is defined as a setting where students learn in different physical locations, backgrounds, and cultures (3). In addition, effective EE is positively associated with better outcomes in an educational institution, and many educators have accepted the fact that the educational environment influences students' approaches, knowledge, skills, progression, and behaviours (3). Further, EE facilitates student-teacher interaction and also teaching and learning activities, through suitable physical structures and facilities provided by the university. The nature of an EE depends on the time, the person involved, and the physical characteristics of the setting. However, de-motivating factors such as competitiveness, authoritarianism, perceived stress, or threatening environments weaken their engagement in the learning process (4).

An ideal academic environment can be considered one that encompasses not only effective communication skills, knowledge, credibility, and teacher preparedness, but also one that prepares students for their future professional life while enhancing their personal and psychological development (2). In nursing education, good EE develops essential skills and greater engagement among nursing students, which eventually enhances their preparedness for clinical training to address future challenges (5).

Moreover, some recent systematic reviews highlighted the fact that a less favourable educational environment is one of the major reasons for the development of stress (6–8). In contrast, a positive educational environment provides a positive impact for the students in acquiring knowledge, critical thinking, and motivation relevant to education and engagement in social life (1, 6). Nursing students' resilience and quality of life have been majorly dependent on the overall educational environment (9). Creating a supportive educational environment is also considered a strategy used by nurse educators in Asian and American countries to enhance or maintain nursing student resilience (9).

Identifying the educational environment and understanding students' learning helps teachers to facilitate learning and plan a curriculum to achieve better learning outcomes (4). It was highlighted that students' perception of the current educational environment has become a stronger predictor of learning outcomes in a university than their poor achievement at school. Moreover, the underachievers and academic achievers have elaborated on different student perceptions towards the educational environment (2).

In Sri Lanka, nursing education has undergone a transformation from a diploma to a degree level since 1994. These changes supported the national healthcare system by providing a significant number of skilled graduate nurses to fulfill the country's long-term demands (10). The accomplishment and satisfaction of nursing education among nursing undergraduates depend on their EE, which facilitates the development of nurses' ability to provide quality care (11).

The Faculty of Nursing, University of Colombo, was established in 2017, and student enrolment started in 2018 with 86 students (1st batch). This is the youngest and standalone nursing faculty in Sri Lanka, offering a Bachelor of Science in Nursing (Honors). Since the Faculty of Nursing was recently established, its curriculum is being frequently monitored to ensure it remains effective. However, the educational environment, as perceived by the students, is beneficial and considered crucial to the success of curriculum implementation.

Further, it was stated that analysis of the EE should be part of the appropriate educational practices (12).

According to the literature, it is evident that the majority of universities express a positive educational environment when delivering nursing curricula. Six universities in Sri Lanka have been individually evaluated educational environment in their BSc Nursing programmes and it came out as having more positive than negative categories (13).

As the learning community of the Faculty of Nursing, the undergraduate nursing students' viewpoint on the educational environment is a subjective measure of the success of the Faculty of Nursing. The educational environment has become a crucial factor influencing the quality of education and the development of professional competencies among students. This fact is particularly true for undergraduate student nurses, where a positive and supportive educational environment enables students to develop the skills and engagement essential for their future careers. Despite the recognised understanding of the importance of the educational environment, there is a limited understanding of how student nurses in Sri Lanka perceive their educational environment, particularly within newly established institutions such as the Faculty of Nursing at the University of Colombo.

Despite the global literature and a few local studies available for nursing undergraduates, there is a lack of literature concerning undergraduate nursing students' perceptions of the educational environment at the University of Colombo. Therefore, the study aimed to assess nursing students' perception of the educational environment at the Faculty of Nursing, University of Colombo, Sri Lanka. The findings would be helpful for curriculum planners and administrators of the Faculty of Nursing to make the necessary adjustments to achieve optimal educational outcomes in the nursing programme. Furthermore, guidance can be provided to facilitators to reflect, devise, and implement the most effective teaching strategies for enhancing the educational environment.

METHODOLOGY

Study Design, Setting, and Participants

A descriptive cross-sectional study was conducted among all BSc Nursing undergraduates, following their 3rd year, 2nd year, and 1st year (2016/2017, 2017/2018, and 2018/2019) at the Faculty of Nursing, University of Colombo, Sri Lanka. A total of 262 students were recruited in the study (all students). Informed written consent was obtained from all the participants. The study was conducted from 2022 to 2023.

The Inventory/Study Instruments

A pretested self-administered questionnaire (SAQ) (n = 30), developed based on the objectives of the research, was used to collect the data. The questionnaire consisted of two sections: Section A covered sociodemographic characteristics of the students (age, ethnicity, living status, and academic year), and Section B assessed perceptions of the educational environment based on the Dundee Ready Education Environment Measure (DREEM). DREEM is a non-culturally specific, universal diagnostic tool developed and internationally validated by Sue Roff and her colleagues at the Centre for Medical Education, University of Dundee, United Kingdom, in 1997 (14). It includes 50 items with a five-point Likert scale

(0–4), where 0 = strongly disagree, 1 = disagree, 2 = unsure, 3 = agree, and 4 = strongly agree. These items are categorised into five subscales, such as student's perception of learning (12 items), student's perception of teachers (11 items), student's academic self- perception (8 items), student's perception of atmosphere (12 items), and student's social self-perception (7 items). The total score obtained from the tool ranges from 0 to 200, where scores of 0–50 are considered "very poor", 51–100 indicate "many problems", 101–150 reflect "more positive than negative", and 151–200 are considered "excellent". Each item was also evaluated based on the mean value it gained. Mean ≥ 3 is considered as "true positive aspect", mean 2.0–3.5 is considered as the environment could be enhanced; and means ≤ 2 indicates a problem area (14). Furthermore, a separate scoring guide was provided by the original author for the scoring of each subdomain and their interpretation, which is given in Table 1.

Table 1: Guide for interpretation of the DREEM scores

Domains	Score	Interpretation
Total DREEM score	0–50 = 0 (0.0) 51–100 = 30 (12.3) 101–150 = 170 (70.0) 151–200 = 43 (17.7)	Very poor Plenty of problems More positive than negative Excellent
	0–12 = 1 (0.4) 13–24 = 33 (13.6) 25–36 = 155 (63.8) 37–48 = 54 (22.2)	Very poor Teaching is viewed negatively A more positive perception Teaching highly thought of
Student's perception of teachers	0–11 = 1 (0.4) 12–22 = 26 (10.7) 23–33 = 163 (67.1) 34–44 = 53 (21.8)	Abysmal In need of some retraining Moving in the right direction Model course organizers
Students' academic self-perception	0–8 = 2 (0.8) 9–16 = 29 (11.9) 17–24 = 161 (66.3) 25–32 = 51 (21.0)	Feelings of total failure Many negative aspects Feeling more positive Confident
Students' perception of atmosphere	0–12 = 4 (1.6) 13–24 = 64 (26.3) 25–36 = 140 (57.6) 37–48 = 35 (14.4)	A terrible environment There are many issues A more positive attitude A good feeling overall
Students' social self-perception	0–7 = 0 (0.0) 8–14 = 41 (16.9) 15–21 = 182 (74.9) 22–28 = 20 (8.2)	Miserable Not a nice place Not too bad Very good socially

The content validity of the original instrument was tested using Delphi techniques, and it was concluded that DREEM can be used as a universal diagnostic tool. The reliability of the overall DREEM questionnaire was 0.7 (15). Similarly, another study found that internal consistency was maintained at 0.7–0.9 for the overall DREEM score (16).

The self-administered questionnaire was developed initially in English. The back-translation method was used to translate the SAQ. Initially, the English SAQ was translated into Sinhala and Tamil languages by two independent language experts, who were requested by the principal investigator (PI) to retain the original structure and content as much as possible. The PI discussed some variations with the two experts, and consensual alterations were made. Finally, the agreed Sinhala and Tamil versions of the SAQ were back-translated to English by the other two bilingual English-Tamil experts. The back-translated version was

again rechecked with the original version of SAQ by the PI for consistency and accuracy of the information. However, only a few minor discrepancies were found, and these were corrected after discussions with the expert translators.

SAQ was pre-tested among 30 nursing undergraduates at another university to identify any ambiguities in the questionnaire. Pre-testing a questionnaire in the same study setting can lead to biased results. Respondents may become familiar with the questions that may affect their responses during the actual data collection. Institutional approval was obtained from the dean of the faculty before the pre-testing. As a result, modifications were made to the questionnaire by clarifying questions and adjusting the technical depth of certain sentences based on pre-testing. The items involved in modification were, item 24: "learning strategies which worked for me before, continue to work for me" modified to "I apply same learning strategies which were applied before", and item 34: "cheating is a problem in this school" modified to "cheating is a problem in this nursing school". The above modifications were made to enhance the clarity and understanding.

Data Collection

The data collection process proceeded with permission from the higher authority of the university. The questionnaire was administered to students of the 3rd, 2nd, and 1st year separately at the end of their lectures, after explaining the purpose using an information sheet. Researchers considered the entire faculty population, and a total population sampling technique was employed. Written informed consent was obtained from them after ensuring that they understood the information provided in the information sheet. A total of 262 participants were recruited for the study. However, only 243 students completed and returned the questionnaire (92.75%), which was included in the analysis. Those who were on long-term leave (medical leave) at the time of data collection and the students who were not willing to participate in the study were excluded. Participants were instructed to provide accurate information and refrain from discussing it among themselves to prevent contamination. The data collection was conducted immediately after the classroom lecture sessions.

Statistical Analysis

The data were double-checked by the investigators, coded, entered, and analysed using Statistical Package for Social Sciences (SPSS) version 21. In the DREEM, every statement was scored by using a 5-point Likert scale as follows: strongly agree = 4, agree = 3, unsure = 2, disagree = 1, and strongly disagree = 0. Nine negatively worded items (8, 12, 15, 16, 21, 23, 35, 39, and 45) were reverse scored (strongly agree = 0, agree = 1, unsure = 2, disagree = 3, and strongly disagree = 4).

Scores for domains were interpreted using the practical guide proposed by the developers of the original questionnaire (14). The DREEM has a maximum score of 200, indicating an ideal educational environment. The following is an approximate guide to interpret the overall score: 0–50 = very poor, 51–100 = plenty of problems, 101–150 = more positive than negative, and 151–200 = excellent. A higher score indicates a perception that the institution is more positive than negative about its educational environment. Each item with a domain mean score of ≥ 3.5 is considered a true positive point; those with a mean of ≤ 2 are identified as problem areas; scores between 2 and 3.5 indicate aspects of the environment that could be enhanced (15).

Descriptive statistics (frequency, percentage, mean, and standard deviation) were used to describe the demographic and other related variables. Continuous variables were tested for normality, using the Skewness and Kurtosis values of the distribution. Independent sample *t*-test was used to determine statistically significant differences between males and females and underachievers (students who had a failure in any examinations module and those who did not have any failures) for the DREEM subscales scores, and one-way analysis of variance (ANOVA) was used to determine the mean difference between the score of the five domains of DREEM and the student's academic year. Since the ANOVA test revealed significant differences, post-hoc comparisons were made using the Bonferroni post-hoc test to identify the groups with significant mean differences between the three academic years. A probability of $p < 0.05$ was considered statistically significant for all tests.

Ethical Considerations

Ethical approval was obtained before commencing data collection. Written informed consent was obtained from each participant after they were informed about the study using the provided information sheet. In addition, the anonymity and confidentiality of responses were ensured by maintaining an anonymous questionnaire, in which participants were assigned a serial number without being asked to provide their personal information. Also, confidentiality was maintained by entering the research data into a password-protected computer to which only the investigators had access. Furthermore, voluntary participation and the right to refuse to participate in the study were emphasised.

RESULTS

A total of 243 nursing undergraduates have completed the survey (response rate: 93.8%). Most participants were female (79.01%), with a mean age of 23.07 (±1.09) years. Nearly 81% of the participants were Sinhalese, and 69% were currently staying at the university hostel (Table 2).

Table 2: Sociodemographic and academic details of the participants (n = 243)

Characteristic	Response	Male n (%)	Female n (%)	Total n (%)	*p*-value
Gender		51 (20.98)	192 (79.01)	243 (100.00)	
Age (±SD)		23.25 (±1.21)	23.03 (±1.06)	23.07(±1.09)	0.22#
Ethnic background	Sinhalese Tamil Muslim	33 (64.7) 5 (9.8) 13 (25.5)	165 (85.9) 23 (11.9) 4 (2.2)	198 (81.5) 28 (11.5) 17 (7.0)	0.00*
Religion	Buddhist Hindu Islam Roman Catholic	32 (62.7) 5 (9.8) 13 (25.5) 1 (2.0)	152 (79.2) 22 (11.5) 4 (2.2) 14 (7.2)	184 (75.7) 27 (11.1) 17 (7.0) 15 (6.2)	0.00*
Current living arrangement	Living with parents Renting alone Renting with others University hostel	6 (11.8) 1 (2.0) 7 (13.7) 37 (72.5)	57 (29.7) 0 (0.0) 5 (2.6) 130 (67.7)	63 (26.0) 1 (0.4) 12 (4.9) 167 (68.7)	0.00*

(*Continued on next page*)

Table 2 (*Continued*)

Characteristic	Response	Male n (%)	Female n (%)	Total n (%)	*p*-value
Academic year	1st year	17 (33.4)	72 (37.5)	89 (36.6)	0.00*
	2nd year	25 (49.0)	52 (27.1)	77 (31.7)	
	3rd year	9 (17.6)	68 (35.4)	77 (31.7)	
Failure in semester exams	Yes	22 (43.1)	58 (30.2)	80 (32.9)	0.08*
	No	29 (56.9)	134 (69.8)	163(67.1)	

Notes: # Independent sample *t*-test; * Chi-square

When considering the individual analysis of the components within the five domains, the majority of the items (47/50) have a mean score between 2 and 3.5, indicating aspects of the environment that could be enhanced. Only four items among those 47 items, such as "I am encouraged to participate in class" (3.13±0.85), "the teachers are knowledgeable" (3.08±0.86), "I have good friends in this course" (3.25±0.95), "my social life is good" (3.12±0.86), were reported a total item mean value of more than 3. There were no problematic areas (item mean ≤ 2) in the students' perception of learning, students' perception of teachers, and students' academic self-perception domains (Table 3). Even though there were problematic areas in the learning atmosphere, "I find the experience disappointing, 1.80±1.12," and under student social self-perceptions, it was noted "I am rarely bored on this nursing course, 1.99±1.09," and "I seldom feel lonely, 1.93±1.24"

Table 3: Mean score of individual items of the DREEM tool and interpretation

Serial no.	Domain items	Male		Female		Total		Interpretation
		Mean	±SD	Mean	±SD	Mean	±SD	
Students' Perception of Learning								
01	I am encouraged to participate in class	2.94	0.83	3.18	0.85	3.13	0.85	Could be enhanced
02	The teaching is often stimulating/ motivating	2.71	0.85	2.83	0.94	2.81	0.92	Could be enhanced
03	The teaching is student-centred	2.76	0.91	2.72	0.97	2.73	0.95	Could be enhanced
04	The teaching helps to develop my competence/ learning capabilities	2.88	0.65	2.80	1.01	2.81	0.94	Could be enhanced
05	The teaching is well-focused	2.86	0.72	2.77	0.99	2.79	0.94	Could be enhanced
06	The teaching helps to develop my confidence	2.76	0.65	2.72	1.05	2.73	0.98	Could be enhanced
07	The teaching time is put to good use	2.92	0.89	2.84	0.79	2.86	0.81	Could be enhanced
08	The teaching over emphasises factual learning	1.96	1.08	2.30	1.00	2.23	1.02	Could be enhanced
09	I am clear about the learning objectives of the course	3.00	0.72	2.72	0.90	2.78	0.87	Could be enhanced

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Table 3 (*Continued*)

Serial no.	Domain items	Male		Female		Total		Interpretation
		Mean	±SD	Mean	±SD	Mean	±SD	
10	The teaching encourages me to be an active learner	2.86	0.80	2.71	0.98	2.74	0.94	Could be enhanced
11	Long-term learning is emphasised over short-term learning	2.65	0.93	2.52	0.89	2.55	0.90	Could be enhanced
12	The teaching is too teacher-centred	1.96	1.25	2.16	1.12	2.12	1.14	Could be enhanced
Student's Perception of Teachers								
13	The teachers are knowledgeable	3.27	0.85	3.03	0.86	3.08	0.86	Could be enhanced
14	The teachers are patient with patients/students	2.92	0.093	2.61	1.02	2.67	1.00	Could be enhanced
15	The teachers ridicule the students	2.33	1.27	1.21	1.00	2.21	1.06	Could be enhanced
16	The teachers are authoritarian	2.25	1.11	2.03	0.99	2.07	1.02	Could be enhanced
17	The teachers have good communication skills with patients	3.18	0.82	2.87	0.94	2.93	0.92	Could be enhanced
18	The teachers are good at providing feedback to students	2.84	1.05	2.64	1.04	2.68	1.05	Could be enhanced
19	The teachers provide constructive criticism here	2.75	0.89	2.32	0.95	2.41	0.96	Could be enhanced
20	The teachers give clear examples	2.82	0.93	2.85	0.87	2.85	0.88	Could be enhanced
21	The teachers get angry in class	2.65	1.25	2.46	1.13	2.50	1.16	Could be enhanced
22	The teachers are well-prepared for their classes	2.84	1.05	2.84	.932	2.84	0.96	Could be enhanced
23	The students irritate the teachers	2.43	1.15	2.16	1.25	2.21	1.24	Could be enhanced
Students' Academic Self-Perception								
24	I apply same learning strategies which were applied before	2.53	1.10	2.66	0.86	2.63	0.92	Could be enhanced
25	I am confident about my passing this year	2.82	0.93	2.66	0.87	2.69	0.89	Could be enhanced
26	I feel I am being well-prepared for my profession	2.76	0.93	2.63	0.84	2.65	0.86	Could be enhanced

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Table 3 (*Continued*)

Serial no.	Domain items	Male		Female		Total		Interpretation
		Mean	±SD	Mean	±SD	Mean	±SD	
27	Last year's work has been a good preparation for this year's work	2.65	0.98	2.60	0.93	2.61	0.94	Could be enhanced
28	I am able to memorise all I need	2.49	1.08	2.13	0.96	2.20	0.99	Could be enhanced
29	I have learned a lot about empathy in my profession	2.98	0.88	2.98	0.73	2.98	0.77	Could be enhanced
30	My problem-solving skills are being well-developed here	2.88	0.82	2.77	0.74	2.79	0.75	Could be enhanced
31	Much of what I have to learn seems relevant to a career in healthcare	3.06	0.76	2.92	0.76	2.95	0.76	Could be enhanced
Students' Perception of the Atmosphere								
32	The atmosphere is relaxed during consultation teaching	2.76	1.03	2.45	1.077	2.51	1.07	Could be enhanced
33	The schedule is well-timetabled	2.67	1.05	2.01	1.239	2.14	1.23	Could be enhanced
34	Cheating is a problem in this nursing programme	2.24	1.38	2.07	1.12	2.11	1.18	Could be enhanced
35	The environment is relaxed during lectures	2.84	1.05	2.47	1.01	2.55	1.03	Could be enhanced
36	There are opportunities for me to develop interpersonal skills	2.73	0.98	2.67	0.973	2.68	0.97	Could be enhanced
37	I feel comfortable in class socially	2.73	1.02	2.70	0.932	2.71	0.95	Could be enhanced
38	The atmosphere is relaxed during seminars/tutorials/classes	2.57	1.10	2.56	0.92	2.56	0.96	Could be enhanced
39	I find the experience disappointing	1.76	1.18	1.81	1.11	1.80	1.12	Problem area
40	I am able to concentrate well	2.57	1.00	2.55	0.79	2.55	0.84	Could be enhanced
41	The enjoyment outweighs the stress of the course	2.71	1.90	2.10	0.98	2.23	0.99	Could be enhanced
42	The atmosphere motivates me as a learner	2.59	1.00	2.27	1.02	2.34	1.02	Could be enhanced

Table 3 (*Continued*)

Serial no.	Domain items	Male		Female		Total		Interpretation
		Mean	±SD	Mean	±SD	Mean	±SD	
43	I feel able to ask the questions I want	2.78	0.70	2.45	1.00	2.52	0.96	Could be enhanced
Students' Social Self Perceptions								
44	There is a good support system for students who get stressed	2.35	0.98	2.05	1.17	2.12	1.13	Could be enhanced
45	I am too tired to enjoy the nursing courses	2.14	1.04	2.22	1.13	2.20	1.11	Could be enhanced
46	I am rarely bored on this nursing courses	2.22	1.04	1.93	1.10	1.99	1.09	Problem area
47	I have good friends in this course	3.14	1.18	3.28	0.88	3.25	0.95	Could be enhanced
48	My social life is good	3.20	0.80	3.10	0.87	3.12	0.86	Could be enhanced
49	I seldom feel lonely	1.94	1.45	1.93	1.19	1.93	1.24	Problem area
50	My accommodation (hostel/home) is pleasant	2.92	0.99	2.90	0.98	2.90	0.98	Could be enhanced

A mean score of 32.28 (±6.87) for the perception of learning indicates a more positive perception. A total score of 128.46 (±22.61) indicates a more positive than negative educational environment. As a percentage of scores received, the sub-domain student perception of learning (67.25%, 32.28/48) scored the most, and the lowest scoring sub-domain was perception of the atmosphere, 59.79% (28.70/48) (Table 4). A statistically significant mean score difference was observed between students' perception of teachers (p = 0.02) and students' perception of atmosphere/environment (p = 0.02), and gender (male and female) (Table 5).

A statistically significant mean difference was observed in the total score across all three academic years [F (2, 241) = 63.77, p = 0.00]. Bonferroni post-hoc comparisons of the three academic years (1st, 2nd and 3rd year) indicate that the 3rd year had a significantly higher mean score compared to 2nd year (M = 10.45, 95% CI = 5.09–15.82, p = 0.00) and 1st year (M = 24.10, 95% CI = 18.92–29.28, p = 0.00), respectively (Table 6).

Table 4: Mean values of the domains of the DREEM and the interpretation (n = 243)

Domains	Obtainable score	Total score Mean±SD	Interpretation based on the score	Number of students (%) in each category	Interpretation
Students' perception of learning	0–48	32.28±6.87 (67.25%)	A more positive perception	0–12 = 1 (0.4)	Very poor
				13–24 = 33 (13.6)	Teaching is viewed negatively
				25–36 = 155 (63.8)	A more positive perception
				37–48 = 54 (22.2)	Teaching highly thought of

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Table 4 (*Continued*)

Domains	Obtainable score	Total score Mean±SD	Interpretation based on the score	Number of students (%) in each category	Interpretation
Student's perception of teachers	0–44	28.48±5.87 (64.72%)	Moving in the right direction	0–11 = 1 (0.4) 12–22 = 26 (10.7) 23–33 =163 (67.1) 34–44 = 53 (21.8)	Abysmal In need of some retraining Moving in the right direction Model course organisers
Students' academic self-perception	0–32	21.51±4.80 (67.21%)	Feeling more on the positive side	0–8 = 2 (0.8) 9–16 = 29 (11.9) 17–24 = 161 (66.3) 25–32 = 51 (21.0)	Feelings of total failure Many negative aspects Feeling more on the positive Confident
Students' perception of atmosphere	0–48	28.70±7.59 (59.79%)	A more positive attitude	0–12 = 4 (1.6) 13–24 = 64 (26.3) 25–36 = 140 (57.6) 37–48 = 35 (14.4)	A terrible environment There are many issues A more positive attitude A good feeling overall
Students' social self-perception	0–28	17.51±3.21 (62.53%)	Not too bad	0–7= 0 (0.0) 8–14 = 41 (16.9) 15–21 = 182 (74.9) 22–28 = 20 (8.2)	Miserable Not a nice place Not too bad Very good socially
Total score	0–200	128.46±22.61	More positive than negative	0–50 = 0 (0.0) 51–100 = 30 (12.3) 101–150 = 170 (70.0) 151–200 = 43 (17.7)	Very poor Plenty of problems More positive than negative Excellent

Table 5: Mean differences between the domains of the DREEM and gender of the participants (n = 243)

Domains	Male Mean ±SD	Female Mean ±SD	*p-value
Students' perception of learning	32.27±5.38	32.28±7.23	0.99
Student's perception of teachers	30.29±6.44	27.97±5.64	0.02
Students' academic self-perception	22.18±5.29	21.33±4.66	0.27
Students' perception of atmosphere/ environment	30.94±7.12	28.11±7.62	0.02
Students' social self-perception	17.90±4.12	17.40±2.93	0.42
Total score	133.59±22.79	127.09±22.42	0.07

Note: * Independent sample *t*-test

In addition, a statistically significant mean difference was observed in all five domains of DREEM across all three academic years ($p < 0.05$) (Table 7).

Table 6: Bonferroni post hoc test

(I) Batch		Mean difference (I−J)	Std. error	Sig.	95% Confidence interval	
					Lower bound	Upper bound
1st batch	2nd batch	−10.455*	2.225	0.000	−15.82	−5.09
	3rd batch	−24.104*	2.149	0.000	−29.28	−18.92
2nd batch	1st batch	10.455*	2.225	0.000	5.09	15.82
	3rd batch	−13.649*	2.149	0.000	−18.83	−8.47
3rd batch	1st batch	24.104*	2.149	0.000	18.92	29.28
	2nd batch	13.649*	2.149	0.000	8.47	18.83

Note: * The mean difference is significant at the 0.05 level.

Table 7: Perception of educational environment and its subscales with year of enrollment (n = 243)

Domains	3rd year Mean±SD	2nd year Mean±SD	1st year Mean±SD	p-value@	Post-hoc test p-value
Students' perception of learning	26.26±5.67	27.74±2.82	32.07±3.57	0.00 F = 44.20	0.00*, 0.00#
Student's perception of teachers	21.84±4.20	24.17±3.99	27.37±3.68	0.00 F = 41.15	0.00*, 0.00#, 0.00$
Students' academic self-perception	18.79±4.05	20.05±3.69	21.35±3.32	0.00 F = 9.99	0.00*
Students' perception of environment	23.53±6.94	26.95±5.86	31.10±3.61	0.00 F = 38.62	0.00*, 0.00#, 0.00$
Students' social self-perception	11.47±2.67	13.44±2.79	14.11±2.60	0.00 F = 21.17	0.00*, 0.00$
Total perception of educational environment	101.90±17.31	112.35±13.52	126.00±10.16	0.00 F = 63.77	0.00*, 0.00#, 0.00$

Notes: @ One way ANOVA, * 1st year was significantly different to 3rd year, # 2nd year was significantly different to 3rd year, $ 1st year was significantly different to 2nd year

DISCUSSION

Being a newly established faculty for Nursing Degree programmes in Sri Lanka, it is essential to assess the EE of the faculty to bring in changes at the early stage of faculty development, especially in teaching and learning aspects. Furthermore, evaluating the educational environment is crucial for identifying areas that may impact the academic performance of nursing undergraduates. Thus, a globally accepted tool for the academic programme of health care sciences, the DREEM inventory (17), was used to assess the perception of the educational environment among nursing undergraduates of the Faculty of Nursing, University of Colombo, Sri Lanka.

DREEM SCORE

The recent literature review revealed several research studies that have conducted a similar research setup utilising the same research tool. In the present study, it was identified that the total score earned by the students was 128.46 (±22.61), indicating a more positive than negative educational environment. Similar findings were reported in a study conducted in Saudi Arabia in 2019, with a value of 129.70 (18). In contrast, an Egyptian study reported 138.18 (19), a Pakistani study reported 129.9 (5), an Indian study reported 121.48 (20), and a Nepalese study reported 131.25 (2).

It was found that there is a trend of earning higher scores from the faculty's freshers (1st-year nursing students) and the lowest scores from the senior students (3rd-year students). A similar trend was observed with most of the other studies (2, 5, 18, 19, 20). Most likely, the reason for the scoring pattern is that the 1st-year students are not yet exposed to the stressful aspects of academia or the clinical setting. However, in contrast to these findings, an Indian study found that freshman (1st-year students) reported a lower DREEM score compared to senior nursing undergraduates' perception of the educational environment (21).

Among the five domains explored in the DREEM scale, student perception of learning scored the highest, 32.27, and students' social self-perception scored the lowest as 17.90. The difference in sub-domains highlights the impact of cultural, institutional, and educational factors on student perceptions. The effectiveness of educational strategies, such as classroom teaching with small and large group sessions, and interactive sessions involving multimedia facilities, is represented by higher student perception of learning scores and lower self-perception scores. This highlights the need for improvement in students' mental health and social support for student nurses. The present study's results were consistent with those of the Saudi Arabian study (18), the Egyptian study (19), and the Nepalese study (2), which were also conducted with nursing undergraduates. Yet the results were inconsistent with a Pakistani study in which the highest scoring domain was identified as student perception of the atmosphere, and the lowest score remained the same with the student social self-perception (5).

Analysis of each item in DREEM showed that none of the items scored more than 3.5, indicating that there were no true positive points and many areas need improvement. Only four items scored more than 3 (less than 3.5), indicating that students perceived teachers as knowledgeable and encouraged to participate in class. In addition, students perceived that they have good friends, and their social life is good. These findings revealed that the present educational environment is conducive.

Three out of 50 items scored less than the mean value of 2 were, "I find the experience disappointing; I am rarely bored on this nursing course, and I seldom feel lonely". The results have shown a consistent nature in the Nepalese study and the Saudi Arabian study (2, 18). These underscored statements highlight the challenges that students encounter with the new faculty. The fact "I am rarely bored on this course" suggests that some students may find the course content or the method of delivery less engaging. Several factors may have contributed to this, such as inadequate resources, lack of innovative and diverse pedagogical strategies, and insufficient training opportunities for students. Mentorship would be beneficial for students to discuss course-related matters and peer-related issues, and also for the development of the programme.

Students' Perception of Learning

Considering the first domain, the items which scored the least mean values were the teaching is too teacher-centred, 2.12±1.14, and the teaching over-emphasises factual learning, 2.23±11.02 (maximum 04, minimum 0). The low scores suggest that the current method may not be sufficiently engaging or interactive, as it limits the active involvement of students. The fact that "the teaching over-emphasises factual learning" shows, the students perceive that the existing learning has prioritised rote memorisation over critical thinking. The low scores indicate a concerning trend, suggesting that the educational methods employed may not sufficiently engage students or foster interactive learning environments. Teacher-centred approaches often place the instructor as the primary source of knowledge, which can lead to passive learning experiences. This passivity may hinder students' motivation and investment in their education, as they might feel less ownership over their learning process. In contrast, active learning strategies such as group discussions, case studies, and problem-based learning are known to enhance student engagement and promote deeper understanding.

Students' Perception of Teachers

Considering the second domain, which focused on student perception of teachers, the highest item scored by the teachers is that they are knowledgeable and have good communication skills with students, and the lowest scored item was that the teachers are authoritarian. This result was reported differently; teachers were knowledgeable, which was reported with the highest score in Saudi Arabian, Egyptian, and Nepalese studies. The lowest value for the domain was consistent with the Saudi Arabian and Nepalese studies (2, 18, 19).

Students' Academic Self-Perception

Considering the 3rd domain, the highest scored item was, "much of what I learn seems relevant to a career in health care". The study sample consists of undergraduate student nurses, and their perception reflects a positive alignment between educational content and practical career applications in healthcare, as their curriculum is designed to develop competent nurses for society. The study results are consistent with Saudi Arabian and Egyptian studies and was inconsistent with a Nepalese study (2, 18, 19).

Students' Perception of Environment

The 4th domain represented the student perception of environment, and the highest scored item under this present study was "I feel comfortable in class socially", yet the value needs to be improved. Sri Lanka has a collective culture, which highlights relationships and social harmony. This cultural background may have helped them feel more comfortable and supported. This result was inconsistent in a Saudi Arabian study, an Egyptian study scored "I can concentrate well" as the highest score. A Nepalese study reported, "there are opportunities for me to develop interpersonal skills" as the highest (2, 18, 19).

Students' Social Self Perception

The 5th domain reported two items with the highest scores, "my social life is good, and I have good friends" in this course, which implies a positive impact on the faculty. Having

a multicultural background naturally promotes a rich social life, and friendships are naturally valued. This translates into a positive social perception related to their educational environment. The same item, "I have good friends in this course," was reported with the highest score in the Saudi Arabian, Egyptian, and Nepalese studies (2, 18, 19).

The study results suggest that the Faculty of Nursing needs to improve in a few areas, particularly in terms of enriching teaching and learning strategies. This can be achieved by improving the instructional quality among lecturers and students. Furthermore, lecturers can adopt more student-centered learning strategies, such as small-group discussions, peer demonstrations, and peer evaluation of individual performances. In addition, the academic staff can contribute to the development of the lacking areas by participating in professional development programmes, such as supplementary courses in Teaching in Higher Education. Moreover, strengthening the student support systems by enhancing programmes like mentoring, counseling, and social support can be suggested. Lastly, the study results present insights into the improvement of the physical and academic environment of the faculty, which can be enhanced through adequate resource allocation, such as increasing the availability of learning resources and modernising the existing facilities. Furthermore, these strengths can be further improved by enhancing the cultural sensitivity and inclusiveness of all students of the faculty since the faculty comprises students with multicultural and multiracial backgrounds.

Limitation

This study provides the perception of nursing undergraduates at a single institution, the Faculty of Nursing, regarding their educational environment. Thus, it is better to conduct similar studies in other nursing degree programmes across the country for the generalisability of the findings. In addition, qualitative studies need to be conducted to assess in-depth understanding and identify the particular problems and strengths, and weaknesses of the educational environment.

CONCLUSION

This study assessed nursing undergraduates' perceptions of the educational environment at Sri Lanka's first Faculty of Nursing using the DREEM questionnaire across five domains. Overall, the mean score indicated a more positive than negative perception, particularly regarding learning, teachers, and social self-perception. First-year students reported better perceptions than their senior counterparts (2nd and 3rd years). However, the findings indicate that the educational environment is not yet at an excellent level, necessitating immediate improvements. Recommendations include enhancing teaching quality through professional development workshops, integrating modern technology, introducing strong mentoring programmes, implementing regular feedback mechanisms, and improving student clubs and activities to foster a better educational environment.

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ETHICAL APPROVAL

Ethical approval was obtained from the Ethics Review Committee, Institute of Indigenous Medicine, University of Colombo, Sri Lanka (IIM) with the reference number ERC/19/97.

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