



Examining nursing students' perceptions of educational environment: Further validation of DREEM instrument

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ABSTRACT

Background: Educational environment is an essential foundation for the effective learning process of students, which in turn contributes to the success of a curriculum. The evaluation of educational environment from students' perception has been considered as an indicator for the quality improvement of higher education. This study aimed to explore the Vietnamese nursing students' perception of educational environment and identify internal consistency reliability of the Vietnamese version of the Dundee Ready Educational Environment Measure (DREEM) instrument. **Subjects and methods:** A cross-sectional study was conducted among 102 second-year undergraduate nursing students in a medical university. An online survey, including the 50-item DREEM questionnaire, was used to obtain student's perception of learning environment. **Results:** The overall Cronbach's alpha coefficient of the V-DREEM in this study was 0.95 and five sub-scales ranged from 0.74 to 0.85, demonstrating that the V-DREEM instrument has good internal consistency reliability for measurement. The overall score of DREEM was 143.89/200 ($SD = 17.50$), indicating a positive educational environment perceived. Fifty-eight percent (58%) of the items were rated high score, however, there were aspects perceived as problematic including teaching methods (The teaching is too teacher-centered), student-teacher interactions (The students irritate and annoy the teachers), and students' learning approaches (I feel able to ask the questions I want). **Conclusion:** The study results suggested the specific areas, including teaching methods, student-teacher interactions, and students' learning approaches, that need more attention to enhance the educational environment for nursing students in Vietnam where the reform of nursing education has eventuated recently.

Keywords: Educational environment; nursing students; perception; DREEM

INTRODUCTION

Globally, the educational environment has been demonstrated as an important element for students' learning that influences the effectiveness of a

curriculum, students' learning behaviors and academic achievement ^{1, 2}. Evaluation of the educational environment is the key component of curricula appraisal and quality improvement of courses ³. Particularly,

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DOI: 10.54436/jns.2024.01.675

Received: Jul 31, 2023
Accepted: Dec 26, 2023
Published: Dec 27, 2023

in nursing education, understanding the importance of the learning environment and its impact on students' learning experience is essential for educational providers in resolving ongoing educational problems, refining curriculums, improving the quality of education as well as strengthening the learning experience and performance for students⁴. Perceptions of nursing students on how the elements of the educational environment impact their learning experiences provide concrete evidence on the quality of teaching and learning³. Therefore, it is necessary to evaluate the learning environment in which nursing students study in any medical institution.

Literature review

In Vietnam, nursing education currently includes undergraduate and postgraduate levels. Four-year bachelor's undergraduate nursing programs are provided primarily at universities, while 2-year secondary and 3-year college programs are offered at provincial colleges⁵. The length of the undergraduate nursing program for the bachelor's degree in Vietnam is different with other countries, such as Indonesia (five years)⁶ and Australia (three years)⁷. Nursing education in Vietnam has been reformed exponentially by increasing training facilities and enhancing the quality of education to meet the demands of healthcare services and healthcare workforce³. Traditional teaching methods have been replaced by active student-centered teaching and learning methods, while a competency-based curriculum for nursing students has also been developed and implemented³. In addition, the nursing curricula in Vietnam have been integrated with the international nursing curricula through global training projects to improve the quality of education^{8, 9, 10, 11}.

However, due to the impact of the coronavirus pandemic (COVID-19), global education has been affected, meaning many colleges and universities over the world were closed, the teaching and learning strategies had to adjust and adapt accordingly¹². With the option of studying on-campus no longer available, online learning has been adopted as a new way of teaching and learning used extensively during the outbreak¹³. There were also significant challenges reported for students when studying online, such as limited interaction and communication with teachers, lower concentration in online classes then leading to more confusion, experience, and capacity shortage in using technology¹⁴. In Vietnam, education has changed since 2020, such as adjusting the educational curriculum, reducing the content of the curriculum, and changing the teaching-learning method from face-to-face to online to cope with and adapt to the new situation¹⁵. Nevertheless, during this period, there were limited studies conducted in Vietnam to explore how nursing students perceive their educational environment.

There is a variety of methodologies utilized to examine learning environment, such as questionnaires^{16, 17, 18} or qualitative approaches^{19, 20}. The 50-item Dundee Ready Educational Environment Measure (DREEM) is one of the most validated instruments used to investigate educational environment experienced by students in higher health education²¹. In addition, the findings from the DREEM have been reported to be consistent with results of qualitative approach²², and demonstrate the strengths and limitations of any specific educational institution²¹. The DREEM instrument was originally designed by Roff and her colleagues in 1997 to measure the educational environment particularly for

medical schools ²³. The English version of the DREEM, with consistently high reliability, has then been widely used to measure the perception of health students of educational environment experience, including medicine and nursing students ^{6, 24, 25}. The DREEM then has been translated into different languages, validated and applied in multiple educational settings in non-English speaking countries, such as in Nigeria and Nepal ²⁶, Trinidad ²⁷, India ²⁸, Sri Lanka ²⁹, Saudi Arabia ¹⁷, Chile ³⁰, Sweden ³¹, Indonesia ⁶, Green ³². The Vietnamese version of the DREEM had been created following a translation process and reported with good content validity by Hoang ³³. However, there is a limitation of further validation of the DREEM instrument in the Vietnamese version to evaluate the educational environment after Hoang's study, particularly under the effect of the COVID-19 pandemic.

During the total four years of bachelor's undergraduate nursing programs, the junior first-year nursing students are in the transition process of learning from teaching-centered methods in the high school education environment toward student-centered learning at universities ⁶ and not exposed to many areas of nursing curricula ². While the third- and fourth-year nursing students are more likely to have a positive perception of the educational environment as they advance in each year of their study ³⁴. This study, therefore, aimed to explore the perceptions of the second-year undergraduate nursing students on their current educational environment, who have had one year of learning experience at school and preparing for the first clinical placement and identify internal consistency reliability of the Vietnamese version of the DREEM instrument.

METHODS

Study Design

A cross-sectional study was conducted at a medical university located in the North of Vietnam with the data collected from the second-year undergraduate nursing students.

Recruitment and Sampling

The study's information was sent out and posted on online nursing student forums to invite and encourage second-year undergraduate nursing students to participate, such as XXXX Confessions (Facebook), and Nursing Class Groups (Zalo). Participants logged on using the link provided, the first page included information of study and consent form. They moved on to a questionnaire to see if they agreed. All participants had to complete mandatory questions before submitting. A convenient sample of second-year undergraduate nursing students was undertaken.

Inclusion criteria: nursing students who were in their second year, currently enrolled in the first semester of 2021, preparing for their first clinical placement in a specialty, and willing to participate in the study.

Exclusion criteria: nursing students who were in the first, third or fourth year of their nursing education.

A total of 102 out of 120 second year (85% responses) nursing students responded to participate in the study.

Data collection

Due to impacts of the COVID-19 pandemic, data collection was conducted using an online survey from August to October 2021. Several strategies were employed by researchers to minimize the likelihood of participants simply ticking

answers without reading and considering the questions. For example, ‘instructions and guidance’ involved providing clear and explicit instructions at the survey outset, emphasizing the importance of thoughtful and honest responses. ‘Monitoring response pattern’ entailed researchers analyzing response patterns to detect anomalies or suspicious trends. Consistent patterns of response, such as ticking from top to bottom by many participants, might indicate inattentive or insincere responses.

Instrument

A questionnaire including two sections was used to collect data. Section one is participants’ demographic characteristics, such as age, gender, current accommodation, social group participation, academic achievement (GPA). Section two is the 50-item DREEM questionnaire utilized to explore nursing students’ perception of the educational environment ^{25, 35}.

The DREEM instrument is comprised of 50 items and categorized into five subscales including students’ perceptions of learning (12 items), students’ perceptions of teachers (11 items), students’ perceptions

of academic self-perceptions (8 items), students’ perceptions of atmosphere (12 items), and students’ perceptions of social self-perceptions (7 items) ^{23, 24}. Nine of the total 50 items, including 4, 8, 9, 17, 25, 35, 39, 48 and 50, are reverse items. Each item is scored on a five-point Likert scale (0 = strongly disagree, 1 = disagree, 2 = unsure, 3 = agree, 4 = strongly agree). Higher DREEM scores indicate a more positive educational environment ²⁴. The DREEM’s results can be evaluated at three levels, including overall DREEM score, subscales and individual items, and the interpretation for each level is presented in Table 1 ³⁶.

Student’s course satisfaction was measured by nursing students’ responses to the statement “Overall, I am satisfied with the quality of this course”, rated on a 5-point Likert scale where 5 - agree, 4 - agree somewhat, 3 - unsure, 2 - disagree somewhat, 1 - disagree. In the data analysis, this variable was categorized into two groups named “Agree” (if the statement was rated with a score of 4 and 5) and “Disagree” (if the statement was rated with a score of 3, 2, or 1).

Table 1. Interpretation of the DREEM

Levels	Score	Interpretation
Overall DREEM score	0-50	Very poor
	51-100	Plenty of problems
	101-150	More positive than negative
	151-200	Excellent
Subscales		
Students’ perceptions of learning	0 - 12	Very poor
	13 - 24	Teaching is viewed negatively
	25 - 36	A more positive approach
	37 - 48	Teaching highly thought of

Levels	Score	Interpretation
Students' perceptions of teachers	0 - 11	Abysmal
	12 - 22	In need of some retraining
	23 - 33	Moving in the right direction
	34 - 44	Model teachers
Students' perceptions of academic self-perceptions	0 - 8	Feeling of total failure
	9 - 16	Many negative aspects
	17 - 24	Feeling more on the positive side
	25 - 32	Confident
Students' perceptions of atmosphere	0 - 12	A terrible environment
	13 - 24	There are many issues that need changing
	25 - 36	A more positive atmosphere
	37 - 48	A good feeling overall
Students' perceptions of social self-perceptions	0 - 7	Miserable
	8 - 14	Not a nice place
	15 - 21	Not too bad
	22 - 28	Very good socially
Individual items	≤ 2	Problematic area
	Between 2 and 3	Could be enhanced or improved
	> 3	Real positive points

Statistical analysis

Stata software version 16 was utilized to enter and analyze data. Demographic variables were presented in frequencies. The Cronbach's alpha test for both the total score and subscale scores was calculated to determine the internal consistency of the Vietnamese's DREEM version. As the data is normally distributed, means and standard deviations were calculated and utilized for scores of each item, subscale, and scale of the Vietnamese's DREEM. The association of the demographic characteristics and the DREEM total score were assessed using a one-way ANOVA, independent Samples T-Test and Pearson test. Statistical significance was set at $p < 0.05$.

Ethical Considerations

This study obtained ethical approval from the Ethical Review Board for Biomedical Research of Vinmec International Hospital JSC - VinUniversity (No.114/2020/QD-VMC). All study information was given to the participant in accordance with the survey link. The participants' submission of their completed surveys indicated their consent to participate in the study.

RESULTS

Demographic characteristics

The participants' characteristics are presented in Table 2. Among 102 respondents, seventeen (16.67%) were males and eighty-five (88.33%) were female. Most students were living in private accommodation outside the university campus (65.68%) and one third were living in campus accommodation (30.39%). Approximately two thirds of participants did not have a part-time job (71.57%). The mean GPA of a ten-point scale of nursing students in the first year was 5.92 ($SD = 0.67$).

Table 2. Demographic characteristics of nursing students (n = 102)

Variables		n	Percentages (%)
Gender	Male	17	16.67
	Female	85	83.33
Age			Median = 19, IQR = 0
Current accommodation arrangement	Campus accommodation	31	30.39
	Private accommodation	67	65.68
	Living with family	4	3.84
Part-time job	No	73	71.57
	Yes	29	28.43
Social group participation	No	85	83.33
	Yes	17	16.67
Student affairs/ services in school	No	32	31.37
	Yes	70	68.63
GPA in the 1st year			Mean = 5.92, SD = 0.67 Range (Min - Max) = 4 – 7.55

Students' perception of their current nursing educational environment

Table 3 shows the overall Cronbach's alpha coefficient of the V-DREEM in this study was 0.95 and five sub-scales ranged from 0.74 to 0.85, demonstrating that the V-DREEM instrument has good internal consistency and adequate reliability for measurement.

The total mean score of the DREEM was 143.89 out of 200 ($SD = 17.50$) which indicated that students' perception of the educational environment was more positive than negative ³⁶. Regarding each domain of the DREEM instrument, the total mean score of the perception of learning subscale was 35.28 out of 48 ($SD = 4.69$), which represented a more positive

perception of participants of the learning environment ³⁶. For the domain perception of teachers with the maximum score of 44, students perceived the performance of teachers to move in the right direction with the mean score 31.68 ($SD = 4.00$). The mean score of the academic self-perception domain ($M = 23.96$, $SD = 3.71$) suggested that nursing students felt more on the positive side of their academic achievement. For domain perceptions of atmosphere, the total score was 33.47 ($SD = 4.39$); this score indicated a positive participant perception of atmosphere. The score of the last subscale social self-perceptions ($M = 19.50$, $SD = 3.27$) demonstrated students' perception of the social environment in the school was acceptable. (Table 3)

Table 3. Scores of overall DREEM and its subscales (n = 102)

Scale	No. of items	Mean	SD	Score interpretation	Cronbach's Alpha
Total Perception of Learning Environment	50	143.89	17.50	'More positive than negative'	0.948
Students' perceptions of learning (SPL)	12	35.28	4.69	'A more positive approach'	0.855
Students' perceptions of teachers (SPT)	11	31.68	4.00	'Moving in the right direction'	0.828
Students' academic self-perception (SAP)	8	23.96	3.71	'Feeling more on the positive side'	0.843
Students' perception of atmosphere (SPA)	12	33.47	4.39	'A more positive atmosphere'	0.80
Students' social self-perceptions (SSP)	7	19.50	3.27	'Not too bad'	0.743

In terms of individual items of the Vietnamese DREEM, a total of 29 items were perceived in positive points with a mean score more than 3.0 ³⁶. There were three items perceived with the highest scores, including "The teachers are knowledgeable" ($M = 3.45$, $SD = 0.52$), "The teachers appear to have effective communication skills with students" ($M = 3.36$, $SD = 0.54$) and "There are opportunities for me to develop interpersonal skills" ($M = 3.25$, $SD = 0.52$). Scores of 18 items presented in all five groups were between 2.0 and 3.0, indicating that these aspects of the educational environment need to be enhanced, such as "The teaching over emphasizes factual learning", "The teachers get angry in teaching sessions", "I am able to memorize all I need", "I find the experience disappointing", "There is a good support system for students who get stressed". In addition, there were three items perceived as problematic areas that were scored less than 2.0 and need to be paid attention to improve the educational environment, particularly "The teaching is too teacher-centered" ($M = 1.89$, $SD = 1.01$), "The students irritate and annoy the teachers" ($M = 1.77$, $SD = 1.02$), "I feel able to ask the questions I want" ($M = 0.77$, $SD = 0.6$). The detailed information is presented in Tables 4 and 5.

Table 4. Mean scores of individual items of the Vietnamese DREEM

Each item	Mean	SD	Each item	Mean	SD
Students' perceptions of learning (SPL)			Students' academic self- perception (SAP)		
1. I am encouraged to participate in class	3.24	0.55	5. Learning strategies which worked for me before continue to work for me now	2.78	0.75
7. Teaching is often stimulating	2.90	0.67	10. I am confident about passing this year	2.92	0.74
13. Teaching is student-centred	3.12	0.63	22. I feel I am being well prepared for my profession	3.18	0.58
16. The teaching helps to develop my competence	3.21	0.60	26. Last year's work was good preparation for this year's work	3.21	0.57
20. The teaching is well focused	3.22	0.54	27. I am able to memorise all I need	2.44	0.79
21. The teaching helps to develop my confidence	3.17	0.58	31. I have learned a lot about empathy in my profession	3.23	0.58
24. The teaching time is put to good use	3.09	0.55	41. My problem-solving skills are being well developed	3.04	0.64
25. The teaching over emphasizes factual learning*	2.07	1.0	45. Much of what I have to learn seems relevant to a career in healthcare	3.17	0.68
38. I am clear about the learning objectives of the course	3.14	0.56	Students' perception of atmosphere (SPA)		
44. The teaching encourages me to be an active learner	3.12	0.51	11. The atmosphere is relaxed during ward teaching	3	0.64
47. Long-term learning is emphasized over short-term learning	3.13	0.61	12. This school is well timetabled	3.08	0.62
48. The teaching is too teacher-centered*	1.89	1.01	17. Cheating is a problem in this school*	2.25	1.23
Students' perceptions of teachers (SPT)			23. The atmosphere is relaxed during teaching.	3.02	0.66
2. The teachers are knowledgeable	3.45	0.52	30. There are opportunities for me to develop interpersonal skills	3.25	0.52

Each item	Mean	SD	Each item	Mean	SD	
6. The teachers are patient with students.	3.20	0.53	33. I feel comfortable in teaching sessions socially	3.16	0.58	
8. The teachers make fun of their students*	2.91	0.98	34. The atmosphere is relaxed during tutorials	3.03	0.59	
9. The teachers are strict and controlling*	2.81	0.97	35. I find the experience disappointing*	2.15	1.15	
18. The teachers appear to have effective communication skills with students	3.36	0.54	36. I am able to concentrate well	2.85	0.72	
29. The teachers are good at providing feedback to students	3.09	0.62	42. The enjoyment outweighs the stress of the course	2.93	0.63	
32. The teachers provide constructive criticism	3.19	0.56	43. The atmosphere motivates me as a learner	2.98	0.61	
37. The teachers give clear examples	3.20	0.49	50. I feel able to ask the questions I want*	0.77	0.60	
39. The teachers get angry in teaching sessions*	2.51	1.10	Students' social self-perceptions (SSP)			
40. The teachers are well prepared for their classes	3.19	0.59	3. There is a good support system for students who get stressed	2.5	0.84	
49. The students irritate and annoy the teachers	1.77	1.02	4. I am too tired to enjoy this course*	2.5	0.88	
			14. I am rarely bored in this course	2.81	0.75	
			15. I have good friends in this school	3.14	0.5	
			19. My social life is good	2.81	0.71	
			28. I seldom feel lonely	2.72	0.78	
			46. My accommodation is pleasant	3.02	0.64	

*Negatively worded item

Table 5. Items could be enhanced and those are problematic (n = 102)

Items could be enhanced	Items are problematic
Teaching is often stimulating	The teaching is too teacher-centered*
The teaching over emphasizes factual learning*	The students irritate and annoy the teachers.
The teachers make fun of their students*	I feel able to ask the questions I want*
The teachers are strict and controlling*	
The teachers get angry in teaching sessions*	
Learning strategies which worked for me before continue to work for me now	
I am confident about passing this year	
I am able to memorise all I need	
Cheating is a problem in this school*	
I find the experience disappointing*	
I am able to concentrate well	
The enjoyment outweighs the stress of the course	
The atmosphere motivates me as a learner	
There is a good support system for students who get stressed	
I am too tired to enjoy this course*	
I am rarely bored in this course	
My social life is good	
I seldom feel lonely	

The associations between the Vietnamese DREEM, demographic characteristics, and students' course satisfaction

There is an association between the student's course satisfaction with the nursing program and the DREEM (Table 6). The students who reported "Agree" with the statement of "students' satisfaction with the nursing program", perceived higher scores for the Vietnamese DREEM than those who reported "Disagree", $p<0.05$. Students perceiving "Yes" with the statement of "Student affairs/services in school" were more likely to give higher scores for the DREEM than those who perceived "No", $p=0.05$. However, there is no statistically significant difference between the DREEM and demographic characteristics of participants, such as age, gender, current accommodation arrangement, part-time job, , social group participation, student affairs/services in school, and their GPA in the first year (Table 6).

Table 6. Association between the Vietnamese DREEM and participants' characteristic

Variables	The DREEM		
	Mean ± SD	t/F/r	p
Age ^c	r = 0.07		0.51
Gender ^b	Male 149.06 ± 21.98 Female 142.86 ± 16.42	1.34	0.18
Current accommodation arrangement	Campus accommodation 141.35 ± 16.20 Private accommodation 122.87 ± 17.69 Living with family 147.25 ± 26.46	0.50	0.61
Part time job ^b	No 142.10 ± 18.19 Yes 148.41 ± 14.97	-1.66	0.10
Social group participation ^b	No 143.80 ± 18.19 Yes 144.35 ± 13.98	-0.12	0.91
Student affairs/ services in school ^b	No 138.94 ± 16.91 Yes 146.16 ± 17.50	-1.96	0.05
Students' satisfaction of nursing program ^a	Agree 153.91 ± 16.62 Disagree 132.00 ± 17.89	4.73	0.03
GPA in the 1st year ^c	r = 0.06		0.54

^a One- way ANOVA^b Independent Samples T-Test^c Pearson Test

DISCUSSION

In this study, the internal consistency of the V-DREEM was evaluated to conduct for further psychometric assessment. Feasibility was determined by analyzing the response rate and questionnaire completeness. The study revealed that all participants submitted completed questionnaires without any missing values, indicating a general understanding of the Vietnamese version of the DREEM measurement. Importantly, the Cronbach's alpha coefficient results for the DREEM displayed good internal consistency in this study. This finding

aligns with the results of Hoang's study (Cronbach's alpha = 0.80) conducted in the Vietnamese educational context ³³. However, this study was conducted amidst the significant impact of the COVID-19 pandemic on Vietnam's educational system, differing from Hoang's study. Despite these differences, the findings illustrate that the V-DREEM instrument maintains good reliability.

The total mean score of the Vietnamese DREEM in this study indicated the medical university has achieved a positive perception of nursing students of the educational

environment³⁶. This finding suggests that the second-year nursing students are more likely to enjoy their learning experience at this educational facility. Even though, the positive perception of educational environment has been illustrated in other international studies^{6,34,37} and another study conducted in Vietnam³, the overall mean score in this study is higher. According to Rochmawati and colleagues⁶, higher DREEM score reflects a more student-centered curriculum, thus, this result suggests that the nursing curricula in this school is more likely student-centered. In addition, currently significant changes in nursing education in the present nursing school might result in a more positive educational environment perceived by nursing students. For example, nursing teachers are more responsible for teaching than medical doctors and the quality of human resources is also higher with more nurses having master's and doctorate degrees³. Furthermore, the school where this study was conducted has implemented the nursing competency-based practice standards to rebuild the nursing curriculum which might be a contribution to create a positive learning environment for nursing students. Another possible element contributing to a high score of DREEM in this study is that the study sample included only second-year nursing students who have adapted to the changes in teaching methods and educational environment of the nursing curricula. Previous studies involving nursing students from the first year to the fourth year reported lower score of DREEM as there was a significant difference between the students' perception of learning environment and the year enrollment^{2, 6}. Particularly, a study conducted by Shrestha and colleagues² in Eastern Nepal revealed the highest DREEM

score among the first-year students, followed by the third-year students and second-year students respectively and the fourth-year students had the lowest mean score. This might be because the fourth-year students are exposed to all the areas in the nursing curricula and more stressed than other years³⁸. Contrary to the present finding, a research conducted in Egypt³⁹ found that nursing students had a negative view of their learning environment. The differences in the groups studied and the environments they were in could explain the differences in their perceptions.

The subscale scores of the DREEM in this study according to the interpretation of the DREEM suggested by³⁶ indicated that the nursing students' perception of learning, teachers, their academic self, and atmosphere were positive. These findings align with studies from other countries^{18,40}. The domain of social self-perception in this study was perceived as acceptable plus with five out of seven items (3, 4, 14, 19, 28) scored between 2.0 and 3.0, suggesting the specific areas of student support could be enhanced. This may be because although there is available support for students in the school, nevertheless, several students still felt lonely, tired, and stressed which was explained by evidence from individual items (3, 4, 28, 42). These problems are commonly reported in health education in previous studies^{16, 41}. There are effective support programs suggested in research to help university students to deal with academic stress, social loneliness and tiredness, such as peer-support programs⁴² and mentoring programs⁴³.

In terms of examining each item of the DREEM, those items in this study were categorized into three different areas, such

as problematic area with a mean score less than 2.0, could be enhanced area with the mean score between 2.0 and 3.0, and real positive area with a mean score more than 3.0. According to McAleer and Roff³⁶, items scored three and more than three illustrating the positive areas. The nursing students in this study perceived that the teachers are knowledgeable and appear to have effective communication skills with students, and there are opportunities for them to develop interpersonal skills. This finding demonstrates the positive atmosphere present in the education institution, which is consistent with the finding seen in the study conducted by Sharkawy ³⁹. In this study, there were three problematic items perceived by the nursing students, including “The teaching is too teacher-centered”, “The students irritate and annoy the teachers” and “I feel able to ask the questions I want”. This finding is inconsistent with the result of Ramsbotham and colleagues’ 2016 study conducted in the Vietnamese context, where they found that the mean item scores of V-DREEM ranged from 2.12 to 3.03, with none of the items scored in the problematic range ³. A possible explanation is that the COVID-19 pandemic has led to limitations in communication and interaction between teachers and students due to the shift to online teaching methods. Consequently, teachers faced difficulties in organizing learning activities, and students were less engaged in these online activities. Additionally, some teachers or instructors lacking experience in learner-centered teaching tended to rely on traditional teaching methods rather than utilizing learner-centered approaches⁴⁴. Consequently, students still passively studied and did not want to be engaged and involved in learning activities. The interaction between students and teachers,

therefore, was limited and they did not want to ask questions that they wanted. Based on these results, this study suggests that Vietnamese nursing institutions should pay more attention in applying a student-centered teaching approach which is considered as a key element in enhancing students’ overall scores regarding the learning environment⁴⁵.

This study shows that students who were satisfied with the nursing program in the nursing school were more likely to have a positive perception of the educational environment. Essentially, it implies that when students feel content with the nursing program itself-its structure, curriculum, faculty, resources, etc. They are inclined to view the overall educational environment more positively. It’s a connection indicating that a satisfying experience within the program contributes to a favorable perception of the broader educational setting, likely due to the impact of their positive experiences within the program on their overall educational outlook. A similar finding was seen in a study conducted by Sharkawy ³⁹ where the first-year students had the highest score in perception of learning environment compared to second, third and four-year students. This might be explained by their enjoyment of the initial year of the nursing program and experiencing less stress related to their studies.

Another finding in this study was that students who perceived “Yes” for the statement of available student affairs/services in their school were more likely to give a higher DREEM score than those perceived “No”. Even though the current school has got student affairs/services, there were still some students who may not be approached to support them dealing with their psychological problems. In fact, there

is a limitation of mental health services to support undergraduates, who are often in a high pressure from their academic courses, students' life, during their study among educational institutions in Vietnam ⁴⁶. Majority of participants in this study were female, however, the gender factor was unlikely to have impact on the study results. This finding is consistent with other studies, in which gender did not affect the students' perception of the educational environment ^{32, 47, 48}.

However, the study results need to be interpreted with its limitations. This present study explored the perception of the second-year undergraduate nursing students at one point in time in a Vietnamese medical university, thus, the results may not be representative for other groups of nursing students and the setting was limited to one institution of nursing. These elements reduce the generalizability of the study results. In addition, the study was conducted during the COVID-19 pandemic, which significantly impacted on education. Consequently, there is a need for further development of questions regarding online learning to address emerging issues. Controlling participant behavior and ensuring genuine responses in the online data collection setting were also challenging for researchers.

IMPLICATIONS

Even though this study was conducted in Vietnam, there are broader implications for international undergraduate nursing education. Evaluating the educational environment, including curricula, institutional culture and learning environment, provides meaningful understanding of how and what nursing students learn and extends more evidence

of nursing students' perception of potential areas that facilitate and barrier their learning at the university. Educational providers in the nursing field, therefore, should consider the study findings in determining the possible areas of interruption to nursing students' learning that need to be paid attention to and improved. Within the Vietnamese context, the study results demonstrate the Vietnamese version of the DREEM is an ideal instrument with good reliability that has been validated and highly recommended for a wide use in Vietnam and other educational institutions should use it to evaluate the educational environment.

CONCLUSION

In this study, the perception of nursing students of their educational environment is more positive than negative. Continuously improving the quality of learning environment is important in this nursing school as there were three learning environment areas that need to be improved, including teaching methods, student-teacher interactions, and students' learning approaches. Future studies should be conducted among different year-groups of nursing students and a qualitative approach is recommended to have an in-depth understanding of students' perception toward their educational environment, particularly in nursing education.

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