

ORIGINAL ARTICLE

Exploring the relationship between perceived educational environment and academic achievement among critical care nursing students

Samah Anwar Shalaby*¹, Areej Talal Aljezani²

¹ Faculty of Nursing, Alexandria University, Alexandria, Egypt

² College of Nursing, King Saud Bin Abdulaziz University for Health Sciences, Jeddah, Saudi Arabia

Received: June 6, 2018

Accepted: August 15, 2018

Online Published: August 22, 2018

DOI: 10.5430/cns.v7n1p1

URL: <https://doi.org/10.5430/cns.v7n1p1>

ABSTRACT

Objective: The integrated nursing educational environment remains to have a crucial influence on the student achievement, behaviors, satisfaction and success. The current study aimed to explore the relationship between perceived educational environment and academic achievement among critical care student nurses.

Methods: Participants of this quantitative exploratory descriptive co-relational study were 64 students selected conveniently from the students enrolled in Critical Care Nursing course at spring and fall semesters 2016/2017 in King Saud Bin Abdul-Aziz University. A self-reported questionnaire titled "Student Nurses' Educational Environment Perception (SNEEP)" developed by the researcher to explore the relationship between perceived educational environment and academic achievement among critical care student nurses.

Results: Students aged between 22 to 28 years old and half of them were single, while 58% of students had grade point average (GPA) between 2 to 3.49 and most students perceived their educational environment as more positive than negative, whereas the mean of their perception score was 138.58 ± 11.44 . Finally, there was no statistical significant relationship between students' academic achievement and their both clinical and educational environment perception.

Conclusions: Despite the students perceived their clinical and educational environment as more positive than negative indicating their high level of satisfaction in most of areas of critical care nursing course, the current study revealed no significant correlation between students' clinical and educational environment perception with their GPA. This necessitates the need for ongoing evaluation of learning environment for the same course and other courses to address any further correlation factors that may hinder the learning of students with unsatisfactory academic achievement.

Key Words: Educational environment, Clinical learning, Nursing students, Academic achievement

1. INTRODUCTION

Educational environment plays a crucial role as a key component in promoting nursing students' learning, and critical thinking abilities with a subsequent improvement in students' motivation, competition, satisfaction, self-efficacy and

self-confidence.^[1,2] The educational environment is where teaching-learning process takes place and includes the physical, intellectual, psychosocial, cultural, and motivational factors that stipulate both students and teachers' interaction through the teaching and learning process.^[3]

*Correspondence: Samah Anwar Shalaby; Email: samahanwar1@gmail.com; Address: Faculty of Nursing, Alexandria University, Alexandria, Egypt.

Educational environment is defined as the physical, intellectual, as well as social forces, conditions, and external stimuli which challenge on the individual.^[4] Literature shows that the term educational environment, education climate and learning environment concepts are used as synonyms within the educational institutions.^[5] Thus, nursing educational environment encompasses both theoretical and clinical learning environments with subsequent impact and influence on the students' knowledge, practice, and attitude in addition to the whole educational process.^[6,7] The grade point average (GPA) can be used as a reliable tool to measure the academic performance among nursing undergraduates.^[8] Since nursing is a practice-based profession, the clinical field training is a vital component in the curricula of the undergraduate nursing education, and it allows nursing students to; integrate their cognitive, psychomotor and affective skills and correlate the theoretical part to real clinical situations. The clinical learning environment is the setting where student nurses gain most of their professional development.^[9]

Clinical learning environment encompasses whatever surrounds the student nurses, including clinical settings, hospital staff and patients. The clinical learning environment is a complex network of forces or interactive parameters within the clinical setting and it influences the students' clinical as well as professional learning outcomes and should be accurately assessed by educators.^[10,11] The clinical environment varies from classroom education in many factors including; minimal control of environmental conditions, combination of students' cognitive, psychomotor, and affective skills to deal with patients' needs, strict adherence to patients' safety, and communicating professionally with other multidisciplinary health care providers, as well as patients and their families.^[12]

Educational environment compelled numerous practices, policies, stressors and values within the clinical settings and/or classroom.^[13] Some researchers reported a correlation between the learning environment and the outcomes of students' clinical and academic achievement, and satisfaction.^[14] The impending benefits of a well-structured educational environment include; increased students' confidence, responsibility, knowledge, skills, learning opportunities and practices. On the other hand, the adverse effects encompass; stress, academic failure or dropout, and the development of unwanted behaviors and attitudes.^[15]

Critical care units are one of the main clinical settings for student nurses where they master their competencies and practices acquired in the academic program. Moreover, the first exposure of student nurses to the intensive care units may be accompanied with feelings of stress and anxiety

about their performance. The rationale for students' anxiety is mainly related to: intensity of critically ill patients' diagnosis and care, lack of knowledge, communication with intubated and/ or unconscious patients, high workload, ambiguous role, unsafe feeling, fear of making errors, deal with advanced technology and social acceptance which lead to increase their stress level.^[16-18] Thus, nursing educators must know how the student nurses perceived their clinical experience then apply corrective strategies against their unwanted feelings to increase the benefits of student nurses' clinical learning experiences.

Students play a major role in teaching-learning process by evaluating their educational environment, and this is considered a significant indicator of the effectiveness and satisfactory educational outcomes achievement.^[19] Many researchers emphasized on the impact of the educational environment on the students' learning approach, their academic outcome and motivation level with subsequent implication on the education quality.^[20] There are numerous factors contributing to student nurses' satisfactory level of clinical outcomes, the commonest of these factors include: the clinical setting pedagogical atmosphere, instructors' leadership style, supervision style, and motivation level in addition to the relationship between the students, their colleagues and hospital staff.^[21,22] Thus, it is essential for nursing educators and researchers to rely on a valid tool to assess the students' perception of their educational environments.

Moreover, the educational evaluation and accreditation should depend on reliable and appropriate instruments such as the Dundee Ready Education Environment Measure (DREEM) developed by Roff et al.^[23] The DREEM is an internationally accepted instrument to evaluate students' perceptions of the educational environment weaknesses and strengths in various medical and allied health sciences institutions.^[24-26] The DREEM has five major domains of student's self-perceptions regarding: learning, teachers, atmosphere, academic, and social climate and it has been used by various nursing educational institutions.^[27-30]

Since the integrated nursing educational environment remains to have a crucial influence on the student achievement, behaviors, satisfaction and success, which necessitates, the need to receive a detailed feedback from nursing students regarding their both clinical and academic experiences, especially in highly stressful critical care clinical learning settings, in order to provide a beneficial guide for strategic planning, resource utilization as well as corrective actions of negatively perceived students' concerns for future academic improvement.^[15,31] Many researches mainly emphasized on the clinical environment and student perceptions without

investigating the relationship between their perceptions and academic outcomes.^[2,32] The current study explored the relationship between perceived educational environment and academic achievement among critical care student nurses in College of Nursing, Jeddah.

2. METHODS

2.1 Research design

A quantitative exploratory descriptive correlational research design was used in the current study.

2.2 Setting

The study was conducted at College of Nursing, King Saud Bin Abdulaziz University for Health Sciences, Jeddah. The College offers two undergraduate bachelor programs in Nursing Science: the first is the Stream I, targeting high school graduates over four years while the second program is called Stream II, targeting the university graduates who are interested in nursing profession as a second career. The two programs are preceded by a foundation program of one semester and followed by internship program of one year. The aim of the program is to graduate independent, critical thinkers who can care for patients, families and communities by providing care that is of the highest standard possible. The current study participants received their clinical training during spring and fall semesters 2016-2017 at King Khalid Hospital, Jeddah in the following clinical settings; four general intensive care units, coronary care unit, burns care unit, and emergency department.

2.3 Participant (Subject)

A convenient sampling technique was used to recruit the participants. The participants included a total of 64 students enrolled in the critical care nursing course offered in spring and fall semesters 2016-2017 at the college.

2.4 Tools for data collection

A self-administered questionnaire namely; "Student Nurses' Educational Environment Perception (SNEEP)", consisted of three parts was used for data collection. The first part included critical care nursing students' socio-demographic data such as; age, marital status, children number, residency and availability of transportation. In addition to course-related data included enrolled course, stream, and student's academic achievement presented by critical care nursing course 5.0 GPA of the sum of students' grades in both clinical and theory.

The second part of the questionnaire was the "DREEM scale" to measure the critical care nursing students' education environment perception. DREEM was developed 10 years ago at the University of Dundee to measure medical and health

sciences students' perceptions of their learning environment experience with internal consistency reliability (Cronbach's $\alpha = 0.91$).^[5,23] It encompassed 50 statements designed to measure the quality of the educational environment of health professional programs; comprised the following five sub-scales; Student perception of learning (SPL) included 12 items with a maximum score of 48, Student perception of teachers (SPT) contained 11 items with a maximum score of 44, Student academic perception (SAP) contained 8 items with a maximum score of 32, Student perception of academic atmosphere (SPoA) included 12 items with a maximum score of 48 and finally Student social self-perception (SSP) involved 7 items with a maximum score of 28. All items were rated on a 4-point Likert scale varying from 0 (strongly disagree) to 4 (strongly agree) whereas; the overall DREEM score was out of 200.

DREEM categories and score interpretations were as the following; for students' learning perception: 0-12 is very poor teaching, 13-25 is negatively regarded teaching, 25-37 is a more positive teaching, and 37-49 is highly regarded teaching. Regarding students' teachers/instructors perception: 0-11 is very poor, 12-22 is lack of education, 23-33 is moving in the right track, and 34-44 is model instructors. Concerning students' academic self-perceptions: 0-8 is feelings of failure, 9-16 is many negative feelings, 17-24 is more positive feelings, 25-32 is self-confident. In relation to atmosphere perception: 0-12 is very poor atmosphere, 13-24 is changing atmosphere, 25-36 is a more positive atmosphere, and 37-48 is excellent atmosphere. And for social self-perceptions: 0-7 is miserable, 8-14 is not a good place socially, 15-21 is not very bad socially, and 22-28 is very good socially. Regarding the total DREEM score: 0-50 as very poor, 51-100 is significant problem/s, 101-150 is more positive than negative, and 151-200 is excellent educational environment.^[5]

The third part included the "Clinical Learning Environment Perception (CLEP)", which was developed by the researcher after reviewing the related literature^[16,33] to measure the critical care student nurses' perceptions of their clinical learning environment and consisted of 25 statements categorized into three main domains included; Supervisory relationship (7 statements) with a maximum score of 28, Pedagogical atmosphere on the unit (12 statements) with a maximum score of 48, and Role of the faculty in clinical practice (6 statements) with a maximum score of 24. All statements were rated on a 5-point Likert scale varying from 0 (strongly disagree) to 4 (strongly agree) whereas; the overall CLEP score was out of 100.

Whereas, CLEP categories and score interpretations were as the following; for Supervisory relationship in the clini-

cal: 0-7 as very poor, 8-14 as needs improvement, 15-21 as positive aspect, and 22-28 as Excellent relationship. Regarding students' perceptions of pedagogical atmosphere on the clinical settings: 0-12 as very poor environment, 13-24 as many aspects need changing, 25-36 as more positive attitude, and 37-48 as good overall feeling. Concerning the role of the faculty in clinical practice: 0-6 as very poor, 7-12 as needs changes, 13-18 as moving in the right track, and 19-24 as model faculty. And for total CLEP score: 0-25 as very poor, 25-50 as significant problem, 51-75 as more positive than negative, and 76-100 as excellent clinical learning environment.

The questionnaire was tested for content validity by asking the 5 experts in nursing education field to assess relevancy and necessary modifications were done after a pilot study for 5 internship students who were excluded from the studied sample, then the tool was tested for reliability with Chronbach's alpha, whereas as the reliability of part one, two and three were 0.91, 0.80 and 0.79 respectively.

The students received an orientation clinical training in the college skill labs for two weeks before starting their clinical experience in the previously mentioned clinical settings in the hospital. Then the students spent nine hours per week in these clinical settings proceeded by two hours theory per week in the college classroom for fifteen weeks per semester. The students were assigned to critically ill patients with a ratio of one to one under the supervision of the college clinical instructors with a ratio of one instructor for each ten students. The critical care nursing course was provided for the students in the fourth level before joining one-year internship program.

The researcher distributed a structured questionnaire to the study participants who agreed to participate after asking them to sign the informed consent and provided the standardized instructions and clarifications to the participants on how to complete the questionnaire. Each questionnaire took around 20 minutes. The data collected during the students' break time in the internship program which was the next course after critical care nursing course thus the students were free to provide their perception which will not affect their grades.

2.5 Ethical considerations

The researcher submitted the research proposal and questionnaire to the Student Research Unit (SRU) of the college of nursing - Jeddah (CON-J) then to KAIMRC for reviewing and to obtain a written permission to conduct the study. All the respondents were fully informed about the research purpose and the nature of the study. All respondents were required to indicate their willingness to participate in the

study and their right to withdraw from the study at any time. Confidentiality was ensured in the current study by using code names rather than respondents' real names during data collection and analysis. The questionnaires used for data collection were handled only by the research team.

2.6 Statistical analysis and data managements

Collected data were tabulated and software Statistical package for social science software (SPSS version 20) was used for statistical analysis. Descriptive statistics were used to describe the demographical characteristics of the participants. And the correlation statistics and ANOVA were used to evaluate the relationships between critical care nursing students' perception of both educational and clinical Learning environment and their academic achievement. The significance level was pre-set at $p < .05$.

3. RESULTS

The results presented in Table 1 show that the total number of students was 64 and more than two thirds of students (65.6%) were of age between 22 and less than 24 years old. The students enrolled in fall semester 2016/17 were (54.7%) slightly larger than those in spring semester, (54.7%) of students had no available transportation to the college and most students developed no health problem during the course (79.7%). More than half of students (57.8%) had GPA ranging from 2 to less than 3.49. Moreover, the students received their clinical training in the following clinical settings to fulfill the objectives of critical care course included; four General ICU, Coronary ICU, burn unit, and emergency department (ER). Above one third of students perceived that the best clinical setting was the General ICU.

Table 2 exhibits scores of the DREEM and CLEP; the table reveals that most students (89.1%) perceived their educational environment as more positive than negative, whereas, only 10.9% of students perceived their educational environment as excellent. Also, the table reveals that around two thirds of students (64.1%) perceived their clinical environment as excellent, while one third of students perceived their clinical environment as more positive than negative.

Table 3 shows the scores and interpretation of DREEM and CLEP with their related categories. Regarding DREEM scores, which ranged between 101 and 183 represented by mean score (138.58 ± 11.44) which interpreted as the students perceived their educational environment more positive than negative. And the ranking was done based on the percentage of the mean score of each category divided by the total of each category. The highest ranking of the DREEM categories was related to students' academic perception presented by 78.7% mean score percent and mean \pm SD (25.17

± 3.35) which interpreted as that the students had confident academic perception. Concerning CLEP scores, which ranged between 52 and 100 represented by mean score (78.88 ± 9.92) which interpreted as the students perceived their clinical learning environment as more positive than negative. Whereas, the highest category of CLEP was related to the role of the faculty in the clinical settings presented by 80.7%

mean score percent and mean $\pm SD$ (19.36 ± 2.68) which interpreted as that the students perceived their faculty as ideal model. While the least CLEP category mean was related to the students' perception of clinical settings' pedagogical atmosphere presented by 77% mean score percent and mean $\pm SD$ (37.02 ± 6.62) which interpreted as a good feeling overall.

Table 1. Distribution of students according to students' characteristics

Students' Characteristics	Responses	n = 64	%
Age	22 < 24 years old	42	65.6%
	24 < 26 years old	18	28.2%
	26 \leq 28 years old	4	6.2%
Marital status	Single	32	50%
	Married	29	45.3%
	Divorced	3	4.7%
Children number	No child	47	73.4%
	One child	17	26.6%
Stream	Stream 1	37	57.8%
	Stream 2	27	42.2%
Enrolled course	Fall	35	54.7%
	Spring	29	45.3%
Residency	Away from college	27	42.2%
	Near to college	37	57.8%
Transportation availability	Yes	29	45.3%
	No	35	54.7%
Heath problem	Yes	13	20.3%
	No	51	79.7%
GPA	2.5 \leq 3.49	37	57.8%
	3.5 \leq 4.49	22	34.4%
	More than 4.5	5	7.8%
Best clinical settings	General ICU	27	42.2%
	Burn	7	10.9%
	ER	19	29.7%
	Coronary ICU	11	17.2%

Table 2. Distribution of students according to their perceived educational and clinical environment scores

Domain	Scoring interpretation	Score	N = 64 (100%)	Min	Max
DREEM	Very poor	0–50	0 (0%)	0	0
	Significant problem	51–100	0 (0%)	0	0
	More positive than negative	101–150	57 (89.1%)	101	150
	Excellent	151–200	7 (10.9%)	152	183
	Total	0–200	64 (100%)	101	170
CLEP	Very poor	0–25	0 (0%)	0	0
	Significant problem	26–50	0 (0%)	0	0
	More positive than negative	51–75	23 (35.9%)	52	75
	Excellent	76–100	41 (64.1%)	76	100
	Total	0–100	64 (100%)	52	100

Table 3. Students’ scores and interpretation of their perceived education and clinical learning environment

Perception categories	Max Score	Student’ scores		Mean ± SD*	Ranking**	Interpretation	
		Min	Max				
DREEM	Learning Perception	48	26	42	33.67 ± 3.56	70.1%	More positive perception
	Teachers Perception	44	20	39	27.14 ± 4.43	61.7%	Moving in right direction
	Academic Perception	32	18	32	25.17 ± 3.35	78.7%	Confident
	Atmosphere Perception	48	24	44	33.28 ± 3.53	69.3%	More positive attitude
	Social self-perception	28	13	26	19.31 ± 2.94	69.0%	Not too bad
	Total DREEM	200	101	183	138.58 ± 11.44		More positive than negative
CLEP	Supervisory relationship	28	15	28	22.50 ± 3.97	80.4%	Excellent relationship
	Pedagogical atmosphere	48	22	48	37.02 ± 6.62	77.1%	Good feeling overall
	Role of the faculty	24	15	24	19.36 ± 2.68	80.7%	Model faculty

Note. * SD: standard deviation; ** Ranking was calculated by converting the mean scores of each category to be out of 100 using the following formula (Mean/total score of each category ×100)

Table 4. Correlations between students perceived educational environment and clinical learning environment

CLEP		DREEM					
		Learning (SPL)	Teachers (SPT)	Academic (SAP)	Atmosphere (SPoA)	Social (SSP)	Total DREEM
Supervisory relationship	r	0.157	-0.010	0.160	0.209	0.079	0.176
	p	.216	.935	.205	.098	.535	.164
Pedagogical atmosphere	r	0.174	0.153	0.154	0.271*	0.112	0.270*
	p	.169	.227	.225	.031	.380	.031
Role of the faculty	r	0.288*	0.116	0.213	0.152	0.153	0.283*
	p	.021	.360	.092	.229	.227	.023
Total CLEP	r	.257*	.309*	.254*	.305*	.147	.327**
	p	0.041	0.018	0.045	0.014	0.245	0.008

Note. r: Pearson coefficient; * p ≤ .05 at 5% level denotes a significant difference; ** p ≤ .01 at 1% level denotes a highly significant difference

Table 4 exhibits the relationship between students’ educational environment perception and their CLEP, it was found that there is a positive significant correlation between the total of CLEP and all categories of DREEM whereas, p significant at .05 level except for students’ social self-perception category. Furthermore, a positive significant correlation existed between the pedagogical atmosphere of the clinical unit and students’ perception of academic atmosphere and the total of DREEM whereas, p significant at .05 level. Finally, the role of the faculty on the clinical has significant correlation only with students’ perception of learning and the total of DREEM at .05 level.

Table 5 displays the relationship between students’ characteristics and their perceived educational and clinical learning environment. Regarding educational environment, there is no significant relationship between students’ educational environment perception and their age, number of children, stream, and GPA. On the other hand, a significant relationship was

found between overall students’ educational environment perception and their marital status, transportation availability and developed health problems during the course where (p = .020, .050 and .026 respectively). Moreover, there is a positive significant correlation between students’ marital status and their perception of educational atmosphere where (p = .008). Finally, there is a positive significant correlation between students’ health problems developed during the critical courses and their academic perception where (p = .038). In relation to students’ CLEP, there is no significant relationship between students’ CLEP with their age, marital status, transportation availability, stream and GPA. On the other hand, a significant relationship was found between students overall CLEP and their number of children and developed health problems during the course where (p = .020 and .040 respectively). Moreover, there is a positive significant correlation between students’ number of children and their perception of supervisory relationship where (p = .007).

Table 5. Relationship between students' characteristics and their perception of educational and clinical environment

Categories of educational and clinical environment perception	Students' characteristics							
	Age	Stream	Marital status	GPA	Children No	Transportation	Health problem	
	<i>F</i> (<i>p</i>)	<i>r</i> (<i>p</i>)	<i>r</i> (<i>p</i>)	<i>r</i> (<i>p</i>)	<i>r</i> (<i>p</i>)	<i>r</i> (<i>p</i>)	<i>r</i> (<i>p</i>)	
DREEM	Learning (SPL)	1.043 (.380)	0.053 (.680)	0.026 (.836)	0.129 (.309)	0.052 (.685)	-0.147 (.247)	-0.151 (.233)
	Teachers (SPT)	0.899 (.447)	-0.006 (.964)	-0.152 (.231)	0.084 (.511)	0.005 (.967)	-0.115 (.366)	-0.007 (.954)
	Academic (SAP)	1.479 (.229)	0.070 (.582)	-0.121 (.342)	0.085 (.502)	-0.067 (.600)	-0.189 (.135)	-0.260* (.038)
	Atmosphere (SPoA)	0.506 (.680)	-0.150 (.236)	-0.327* (.008)	0.136 (.284)	0.071 (.578)	-0.217 (.085)	-0.096 (.450)
	Social (SSP)	1.454 (.236)	0.115 (.367)	-0.036 (.777)	0.046 (.717)	-0.129 (.310)	-0.098 (.443)	-0.147 (.245)
	Total DREEM	1.916 (.137)	0.018 (.889)	-0.196* (.020)	0.151 (.233)	-0.013 (.920)	-0.237* (.050)	-0.193* (.026)
	CLEP	Supervisory relationship	0.422 (.738)	-0.132 (.297)	0.132 (.297)	0.120 (.344)	0.334* (.007)	0.147 (.245)
Pedagogical atmosphere		2.456 (.072)	-0.002 (.987)	-0.019 (.885)	0.107 (.401)	0.172 (.174)	-0.002 (.986)	0.064 (.616)
Role of the faculty		0.788 (.505)	0.111 (.383)	0.155 (.220)	0.016 (.902)	0.153 (.226)	-0.064 (.615)	-0.054 (.673)
Total CLEP		1.868 (.145)	-0.025 (.848)	0.083 (.517)	0.124 (.331)	0.290* (.020)	0.040 (.752)	-0.935* (.040)

Note. *r*: Pearson coefficient; *F*(*p*): *p* value for *F*-test (analysis of variance [ANOVA]); * Correlation is significant at the .05 level (2-tailed)

4. DISCUSSION

Nursing educational environment provides a pivotal influence on the student behaviors, satisfaction and achievement. Nursing education is comprised of two complementary elements: theoretical training and practical training.^[34] Thus, it is crucial to receive a comprehensive feedback from nursing students regarding their both clinical and academic experiences. However, educational environment is challenged by numerous stresses, policies, and practices within the classroom and/ or clinical settings.^[12,13] Therefore, the current study aimed to explore the relationship between critical care students perceived educational environment and their academic achievement in College of Nursing, Jeddah.

Apparently, the majority of critical care students in the current study perceived their educational environment as more positive than negative which conveys the message that the academic institution succeeded to influence the students' awareness of the impact of educational environment on their future academic improvement. This is in line with other researchers who reported that the students perceived their academic institution as more positive than negative educational environment.^[35]

Interestingly, the students highly perceived all educational environment domains specifically their academic self-

perception which interpreted as that the students were confident which may be due to that the student were sufficiently prepared and received relevant knowledge for the critical course in addition to their awareness with the impact of their academic institution on their overall educational improvement or perhaps their high perception was affected by their grades during the course duration. This is congruent to other researchers who emphasized on the impact of classroom environment as a good predictor of students' academic achievement.^[36]

On the other hand, the least reported domain of educational environment as perceived by students was related to the students' perception of their teachers which interpreted as that the students moved in right direction with their teachers with increasing their own understanding which may be rationalized as the result of the integration of student centered learning strategies such as self-directed learning and problem based learning by the course teachers.

In relation to the clinical learning environment, the current study findings revealed that the majority of students perceived their clinical learning environment as excellent whereas, they highly perceived all domains of clinical learning environment included; model role of the faculty in the clinical settings, excellent supervisory relationship and good feeling overall the pedagogical atmosphere. This is congru-

ent with many researchers.^[37,38]

Regarding the role of the faculty on the clinical, the current study revealed a significant positive correlation with students' perception of learning and their educational environment perception. This may be as a result of the students' high perception of the faculties because of using high quality feedback and communication skills and using bedside teaching during experiential learning in the clinical settings with accurate selection of patients' condition in the hospital to minimize the clinical and theoretical gap. This is in line with other researches findings which emphasized on the importance of the supervisory relationship of the instructor in improving the students' clinical learning experience outcomes.^[39-41]

Surprisingly, despite the students' high perception of their clinical and educational environment the majority of students had average GPA, the current study findings revealed no significant relationship between students' CLEP and DREEM with their GPA, which perhaps due to the nature and complexity level of critical care nursing course in both theoretical and clinical parts which encompassed many assignments, quizzes, and exams, in addition to all stress provoking factors in the clinical settings as, sophisticated technological machines, unfamiliar nursing staff, lack of experience, and complex critically or terminally ill patients.^[13] Also, these findings may be related to that the students confronted by some difficulties in studying nursing courses in English while their first language was Arabic.^[42] Moreover, the need to increase students' perception of overall educational environment to be excellent instead of more positive than negative and to increase the influence of how much the students perceived their educational environment on their performance, outcomes and academic satisfaction. Similarly to the findings of Payne and Glaspie (2014) who reported no correlation between nursing students educational environment perception with their academic outcomes and GPA.^[35] This is incongruent with Khursheed and Baig (2014) findings who reported moderate correlation between students' perceptions of learning environment with their academic achievements.^[43]

5. CONCLUSIONS

Since it is essential to obtain a widespread feedback from nursing students regarding their perception of educational environment including both clinical and academic experiences by relying on accurate assessment tool to improve the quality of nursing education as well as future nurses. The current study provided evidence that the critical care students in College of Nursing, Jeddah perceived their clinical as well as educational environment as more positive than negative which indicating high level of satisfaction by many areas of the current critical care course and whole nursing program in the current academic institution. Despite the students' perceptions of their educational environment was a greater predictor of success than previous academic performance, the current study revealed no significant correlation between students' clinical and educational environment perception with their GPA whereas, students' performance was not affected by highly perceived DREEM and CLEP. Which necessitates the need for ongoing evaluation of learning environment for the same courses and other parallel courses should be emphasized to address any further correlation factors that may predispose to students' unsatisfactory academic achievement and then apply corrective strategies to increase the quality of students' academic experience in the college and clinical settings. Since the current study was a single center study with few participants, thus it is difficult to generalize the current study findings, it is recommended to replicate the current study using descriptive cross-sectional design to pinpoint the differences in various academic institution with larger sample size and correlate with a wide diversity of nursing students' characteristics.

ACKNOWLEDGEMENTS

This study was supported by King Saud Bin Abdul-Aziz University, college of nursing research unit. Also the authors willing to acknowledge the internship student nurses in King Khalid Hospital-Jeddah for their tremendous cooperation and support during this study.

CONFLICTS OF INTEREST DISCLOSURE

The authors declare they have no conflicts of interest.

REFERENCES

- [1] Zengin N, Pinar R, Akinci A, et al. Psychometric properties of the self-efficacy for clinical evaluation scale in Turkish nursing students. *J Clin Nurs*. 2014; 23(7): 976-84. PMID: 23876212. <https://doi.org/10.1111/jocn.12257>
- [2] Soemantri D, Herrera C, Requelme A. Measuring the educational environment in health professions studies: A systematic review, *Medical Teacher*. 2010; 32: 947-952. PMID: 21090946. <https://doi.org/10.3109/01421591003686229>
- [3] Tokuda Y, Goto E, Otaki J, et al. Undergraduate educational environment, perceived preparedness for postgraduate clinical training, and pass rate on the National Medical Licensure Examination in Japan. *BMC Medical Education*. 2010; 10(35): 1-9. <https://doi.org/10.1186/1472-6920-10-35>

- [4] Said N, Rogayah J, Hafizah A. A study of learning environments in the Kulliyah (Faculty) of Nursing, International Islamic University Malaysia. *The Malaysian Journal of Medical Sciences*. 2009; 16(4): 15-24.
- [5] Roff S. The Dundee ready educational environment measure (DREEM)—a generic instrument for measuring students' perceptions of undergraduate health professions curricula. *Med. Teach*. 2005; 27(4): 322-325. <https://doi.org/10.1080/01421590500151054>
- [6] Hammond S, O'Rourke M, Kelly M, et al. A psychometric appraisal of the DREEM. *BMC Medical Education*. 2012; 12(2): 1-5. <https://doi.org/10.1186/1472-6920-12-2>
- [7] Henderson A, Briggs J, Schoonbeek S, et al. A framework to develop a clinical learning culture in health facilities: ideas from the literature. *International Nursing Review*. 2011; 58: 196-202. <https://doi.org/10.1111/j.1466-7657.2010.00858.x>
- [8] Damayanthi H, Dharmaratne S. Factors Affecting Academic Performance of Nursing Undergraduates in a University, Sri Lanka—A Pilot Study. *International Journal of Evidence-Based Healthcare*. 2016; 14: S9. <https://doi.org/10.1097/01.XEB.0000511623.85498.96>
- [9] Papathanasiou I, Tsaras K, Sarafis P. Views and perceptions of nursing students on their clinical learning environment: teaching and learning. *Nurse Educ Today*. 2014; 34: 57-60. <https://doi.org/10.1016/j.nedt.2013.02.007>
- [10] Rahmani A, Zamanzadeh V, Abdullah-Zadeh F, et al. Clinical learning environment in viewpoint of nursing students in Tabriz University of Medical Sciences. *Iran J Nurs Midwifery Res*. 2011; 16(3): 253-256. PMID: 22224115.
- [11] Brown T, Williams B, McKenna L, et al. Practice education learning environments: the mismatch between perceived and preferred expectations of undergraduate health science students. *Nurse Education Today*. 2011; 31(8): e22-e28. <https://doi.org/10.1016/j.nedt.2010.11.013>
- [12] Nabolsia M, Zumotb A, Wardamc L, et al. The experience of Jordanian nursing students in their clinical practice. *Procedia - Social and Behavioral Sciences*. 2012; 46: 5849-5857. <https://doi.org/10.1016/j.sbspro.2012.06.527>
- [13] Shalaby S, Al-Dilh S. Exploring the Relationship between Perceived Stress and Academic Achievement among Critical Care Nursing Students. *Athens Journal of Health*. 2015; 2(4): 283-296.
- [14] Pitt V, Powis D, Levett-Jones T, et al. Factors influencing nursing students' academic and clinical performance and attrition: an integrative literature review. *Nurse Education Today*. 2012; 32(8): 903-913. <https://doi.org/10.1016/j.nedt.2012.04.011>
- [15] Youssef W, Wazir Y, Ghaly M, et al. Evaluation of the Learning Environment at the Faculty of Medicine, Suez Canal University: Students' Perceptions. *Global Journal of Health Science*. 2013; 7(4): 211-216.
- [16] Muldowney Y, McKee G. Nurses new to intensive care: perceptions of their clinical learning environment. *British Association of Critical Care Nurses*. 2011; 16(4): 201-209. <https://doi.org/10.1111/j.1478-5153.2011.00426.x>
- [17] Martins J, Robazzi M. Nurses' work in intensive care units: feelings of Suffering. *Revista Latino-Americana de Enfermagem*. 2009; 17: 52-58. <https://doi.org/10.1590/S0104-11692009000100009>
- [18] Li J, Lambert V. Workplace stressors, coping, demographics and job satisfaction in Chinese intensive care nurses. *Nursing in Critical Care*. 2008; 13: 12-23. <https://doi.org/10.1111/j.1478-5153.2007.00252.x>
- [19] Till H. Identifying the perceived weaknesses of a new curriculum by means of the Dundee ready education environment measure (DREEM) inventory. *Medical Teacher*. 2004; 26(1): 39-45. <https://doi.org/10.1080/01421590310001642948>
- [20] Al-Naggar R, Abdulghani M, Osman M, et al. The Malaysia DREEM: perceptions of medical students about the learning environment in a medical school in Malaysia. *Adv Med Educ Pract*. 2014; 4(5): 177-184. <https://doi.org/10.2147/AMEP.S61805>
- [21] Papastavrou E, Dimitriadou M, Tsangari H, et al. Nursing students' satisfaction of the clinical learning environment: a research study. *BMC Nursing*. 2016; 15: 44-54. <https://doi.org/10.1186/s12912-016-0164-4>
- [22] Dimitriadou M, Papastavrou E, Efstathiou G, et al. Baccalaureate nursing students' perceptions of learning and supervision in the clinical environment. *Nurs Health Sci*. 2015; 17: 236-42. <https://doi.org/10.1111/nhs.12174>
- [23] Roff S, McAleer S, Harden R, et al. Development and validation of the Dundee Ready Education Environment Measure (DREEM). *Med Teacher*. 1997; 19(4): 295-99. <https://doi.org/10.3109/01421599709034208>
- [24] Odole A, Oyewole O, Ogunmola O. Nigerian Physiotherapy Clinical Students' Perception of their Learning Environment Measured by the Dundee Ready Education Environment Measure Inventory. *International Journal of Higher Education*. 2014; 3(2): 83-91. <https://doi.org/10.5430/ijhe.v3n2p83>
- [25] Khan JS, Tabasum S, Yousafzai UK, et al. Measuring the Medical Education Environment in Undergraduate Medical Colleges Across Punjab, Pakistan. 2011; 27: 14-18.
- [26] Andalib MM, Malekzadeh MM, Agharahimi Z, et al. Evaluation of educational environment for medical students of a tertiary pediatric hospital in Tehran, Using DREEM Questionnaire. *Iranian Journal of Pediatrics*. 2015; 25(5): e2362. PMID: 26495091. <https://doi.org/10.5812/ijp.2362>
- [27] Youhasan P, Sathaanathan T. Educational Environment for Undergraduate Medicine and Nursing Programme at Eastern University, Sri Lanka; Students' Perceptions. *OUSL Journal*. 2016; 11: 23-35.
- [28] Imanipour M, Sadooghiasl A, Ghiyasvandian S, et al. Evaluating the Educational Environment of a Nursing School by Using the DREEM Inventory. *Glob J Health Sci*. 2015; 7(4): 211-216. <https://doi.org/10.5539/gjhs.v7n4p211>
- [29] Rafiei H. Nursing and Midwifery Students Perception Of Educational Environment: A Cross Sectional Study In Iran. *IOSR Journal of Nursing and Health Science*. 2016; 5(1): 64-67.
- [30] Wang J, Zang S, Shan T. Dundee Ready Education Environment Measure: psychometric testing with Chinese nursing students. *Journal of Advanced Nursing*. 2009; 65(12): 2701-2709. <https://doi.org/10.1111/j.1365-2648.2009.05154.x>
- [31] Genn J. AMEE Medical Education Guide No 23 (Part 2): Curriculum, environment, climate, quality and change in medical education—a unifying perspective. *Med Teach*. 2012; 23: 445-454. <https://doi.org/10.1080/01421590120075661>
- [32] Berntsen K, Bjork I. Nursing students' perceptions of the clinical learning environment in nursing homes. *J. Nurs. Educ*. 2010; 49(1): 17-22. <https://doi.org/10.3928/01484834-20090828-06>
- [33] Saarikoski M, Isoaho H, Warne T, et al. The nurse teacher in clinical practice: developing the new sub-dimension to the clinical learning environment and supervision (CLES) scale. *Int J Nurs Stud*. 2008; 45: 1233-7. <https://doi.org/10.1016/j.ijnurstu.2007.07.009>
- [34] Borzu R, Safari M, Khodavisi M, et al. The Viewpoints of Nurses towards Applicability of Nursing Curriculum in Hospitals Affiliated to Hamedan University of Medical Sciences. *Iranian Journal of Medical Education*. 2009; 8(2): 205-211.

- [35] Payne L, Glaspie T. Associations between baccalaureate nursing students' perceptions of educational environment and HESITM scores and GPA. *Nurse Education Today*. 2014; 34: e64-e68. <https://doi.org/10.1016/j.nedt.2013.10.014>
- [36] Talebi S, Davodi S, Khoshroo A. Investigating the effective component of classroom management in predicting academic achievement among English language students. *Procedia-Social and Behavioral Sciences*. 2015; 205: 591-596. <https://doi.org/10.1016/j.sbspro.2015.09.085>
- [37] Jokelainen M, Turunen H, Tossavainen JD, et al. A systematic review of mentoring nursing students in clinical placements. *Journal of Clinical Nursing*. 2011; 20: 2854-2867. <https://doi.org/10.1111/j.1365-2702.2010.03571.x>
- [38] Papastavrou E, Lambrinou E, Tsangari H, et al. Student nurses' experience of learning in the clinical learning environment. *Nurse Education in Practice*. 2010; 10: 176-182. <https://doi.org/10.1016/j.nepr.2009.07.003>
- [39] Gidman J, McIntosh A, Melling K, et al. Student perceptions of support in practice. *Nurse Education in Practice*. 2011; 11: 351-355. <https://doi.org/10.1016/j.nepr.2011.03.005>
- [40] Haitana J, Bland M. Building Relationships: the key to preceptoring nursing students. *Nursing Praxis in New Zealand*. 2011; 27: 4-12. PMID: 21710910.
- [41] Doucette E, Brandys D, Canapi B, et al. The intensive care unit as an untapped learning resource: a student perspective. *Dynamics*. 2011; 22: 19-23. PMID: 21469497.
- [42] Kujan O, Hasan RA, Nasog M, et al. Assessing learning barriers among dental and nursing undergraduates: a qualitative study, students' perspective. *Dentistry*. 2015; 227: 54-3.
- [43] Khursheed I, Baig L. Students' perceptions of educational environment of a private medical school in Pakistan. *J Pak Med Assoc*. 2014; 64(11): 1244-49. PMID: 25831639.