





## Assessing the educational environment of baccalaureate nursing program as perceived by nursing students

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### ABSTRACT

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This study aims at assessing the Educational Environment (EE) of the baccalaureate nursing programs as perceived by nursing students in public and private Iraqi Universities. A descriptive cross-sectional study was conducted to examine the level of nursing students' perception of EE in baccalaureate program. The findings show that the general perception for nursing programs was more positive than negative with a total score of (135.42/200), while students' perception of learning and teaching was very high with a mean score of (M=37+ 6.39); secondly, students' perception of teachers moving in the right direction showed a mean score (M=28+5.3). The third domain was students' academic self-perception, wherein students felt more on the positive side with a mean score of (M=20.4+4.52). The fourth domain was students' perception of the atmosphere, where the students felt that there had a more positive atmosphere, with a mean score of (M=30.8+7.25). The fifth domain was students' social self-perception, where also students had not too bad scores. The quality of an EE is considered an indicator of the effectiveness of an educational program on students' learning. A positive perception of nursing students about the educational environment was concluded. This study will develop practical aspects in the nursing work environment and help nurses to be able to challenge work difficulties and refine their psychology.

**Contribution/Originality:** This study contributes how the educational environment can be utilized as an indicator of the effectiveness of an educational program on students' learning, motivation, and learning outcomes. It also shows how the nursing work environment can help nurses face challenges and work difficulties to refine their psychology and build an efficient generation who can work in difficult work conditions.

## 1. INTRODUCTION

Educational Environment (EE) refers to anything that happens inside the classroom, department, faculty, or the University (Fego, Olani, & Tesfaye, 2022). It also refers to the environment that is perceived by the students as well as the teachers (Enns et al., 2016). The main crucial elements of EE were including include student-teacher

relationships, applicable physical arrangements, facilities that reflect study course quality, and teaching and learning (Dunham et al., 2017).

Bloom's taxonomy of learning domains reflects some aspects of EE worldwide, out of which, three foremost domains need to be assessed, namely, cognitive, affective, and psychomotor domains (Adams, 2015). The cognitive domain involves mental skills such as comprehension, synthesis, and analysis; however, the affective domain involves emotions, enthusiasm, and motivations; and the psychomotor domain involves perception, adaptation, and origination (Mohsena, Debsarma, & Haque, 2016). Bloom's domains could be assessed by the EE, such as cognitive reflection of learning, academic self-perception, affective reflection, and psychomotor skills. Teachers should realize students' perceptions of their experiences of baccalaureate nursing program education in a certain environment, thus authorizing the investigation of current structures and development of effective variation to improve education (Flott & Linden, 2016). Learning quality which is one domain of EE had been acknowledged to be fundamental for efficacious learning (Nordquist et al., 2019).

Assessing the EE is considered a crucial aspect of the provision of a high-quality and student-centered curriculum (Mainul et al., 2017). The student-centered curriculum is related to the cognitive domain which is a helpful method to confirm students' requirements by considering them as the central partners in their education. Valuable learning is linked directly with the students' perceptions of the EE, which influences students' learning practices and achievements (Buerhaus, Skinner, Auerbach, & Staiger, 2017).

The teaching and learning process in the baccalaureate nursing program has some special characteristics since it is largely based on theory and practice (Biffu et al., 2018). The theory-practice gap should be bridged by balancing the knowledge taken in theory courses and the practices obtained in the clinical areas (Salifu, Gross, Salifu, & Ninnoni, 2019). Besides, students' self-perception of academic achievements within a given environment cannot be detached from the context in which it occurs (Shrestha & Mahmood, 2019). Furthermore, the atmosphere of the EE influences students' education knowledge and academic achievements (Erhabor & Don, 2016). Studies have shown that there is a strong association between EE and excellent students' achievement, satisfaction, and success (Shalaby & Aljezani, 2018). Studies indicate that EE is predominantly perceived as positive, but also state that improvements are mandatory to develop physical classroom climate, and the applied teaching and learning policies (Daniels & Mthimunye, 2019; Victor, Ishtiaq, & Parveen, 2016).

The success of teaching process is positively related to teaching proficiency since nurses are empowered to meet the different requirements of patients; act as leaders; develop science that helps patients and the ability of health professionals to provide safe and distinctive medical care (Fleiszer, Semenic, Ritchie, Richer, & Denis, 2016). In developed countries such as Sweden, EE has positive experiences with baccalaureate nursing students (Ekstedt, Lindblad, & Löfmark, 2019). However, in Pakistan, when EE was evaluated by baccalaureate nursing students' perceptions, it showed academic stress resulting in negative perceptions of the social environment in the nursing faculty (Victor et al., 2016). In Iraq, too, a majority of nursing students graded the overall quality of their nursing learning as fair to poor (Algozo, Peters, Ramjan, & East, 2016). The Iraqi study stated that faculty staff and baccalaureate program directors needed to expand their efforts toward monitoring rules of instructional designs, construct a proper EE, and reduce deficits to deliver an improved EE with more services and supportive programs for the students (Lafta et al., 2018). In Jordan, as a developing country, there was a gap seen between students' expectations and EE, in which there was a need for preparing nursing teachers to improve nursing education which makes great challenges in the EE (Nabolsi, Zumot, Wardam, & Abu-Moghli, 2012).

The EE in the nursing profession has a vital role in learning methods since it provides the required competencies to provide care for patients (Ogun, Nottidge, & Roff, 2018). Hence, effective EE and utilizing efficient learning methods to support nursing students with the most relevant skills, and required theoretical knowledge, should be prioritized (O'Mara, McDonald, Gillespie, Brown, & Miles, 2014). The purpose of this study was,

therefore, to assess the educational environment of the baccalaureate nursing programs as perceived by the nursing students.

### *1.1. Research Questions*

1. What are the levels of students' perception of the EE and its domains of baccalaureate nursing programs in Iraqi Universities?
2. Is there a difference in students' perception levels toward EE domains of baccalaureate nursing programs between public and private Iraqi universities?
3. Which of the demographic characteristics predicts the student's perception levels toward EE's domains of baccalaureate nursing program?

## **2. MATERIALS AND METHODS**

### *2.1. Study Design*

A descriptive cross-sectional design was used in this study.

### *2.2. Sample*

Students were enrolled in various faculties such as education, sciences, engineering, agriculture, law, social sciences, and medicine. Two governmental universities in Iraq were picked up by simple random selection. Besides, two private Iraqi universities also recruited students from their 3rd and 4th levels.

### *2.3. Data Collection*

Data were collected from 200 Iraqi students conveniently from four universities. The first public University was situated in the south of Baghdad the capital of Iraq, which had 19 colleges and several scientific and consultancy units with total students of 23,000 for both evening and morning studies. The second public university was located about 100 km southwest of Baghdad and had 16 colleges with a total of 14,000 students. The third university was a private institution located on the road between the city of Karbala and Najaf that included five sections: medical sciences, human medicine, dentistry, pharmacology, analytical analysis, and nursing with total students numbering approximately 14,000. The fourth university, namely Al-Safwa– The University's Elite College– included more than 2,200 students from medical departments (Medical Analysis), engineering departments (Computer Engineering Technology), humanitarian departments (Business Administration), and nursing colleges.

### *2.4. Data Collection Tools*

A questionnaire of two parts was used to collect the required data comprising demographic data and the Dundee Ready Education Environment Measure (DREEM) tool. The first part included questions about the participant's age, educational years, gender, grade point average, and marital status while the second part was the Arabic version of the tool (DREEM).

The DREEM Questionnaire contained 50 statements relating to a range of topics directly relevant to the educational climate. Each item scored using the Likert scale ranging from 0 to 4 "4= Strongly Agree, 3= Agree, 2= Unsure, 1= Disagree, and 0= Strongly Disagree". Nine of the 50 items were negative statements that were reversed when scored. The instrument encompassed items under five domains, namely, student's perception of learning (12 items with a maximum score of 48), students' perception of teachers (11 items with a maximum score of 44), students' academic self-perception (8 items with a maximum score 32), perception of the atmosphere (12 items with a maximum score of 48) and the student's social self-perception (7 items with a maximum score of 28). A total of all 50 items had a maximum score of 200. Higher scores indicate a more positive and convenient EE and vice versa.

Cronbach's alpha was calculated to measure the reliability and internal consistency of the data collected through a survey instrument. The DREEM Arabic version has a high level of internal consistency with an overall Cronbach's alpha coefficient of more than 0.7 (Dimoliatis, Vasilaki, Anastassopoulos, Ioannidis, & Roff, 2010; Prashanth & Ismail, 2018). It also had a high level of stability with a test-retest correlation coefficient of more than 0.8 (Dimoliatis et al., 2010).

### 2.5. Statistical Analysis

Data was analyzed using Statistical Package for Social Sciences (SPSS) version 24. Descriptive analysis included frequency, percentage, mean, and standard deviation was used to describe participants' characteristics and their responses to the sub-domains of the tool. The inferential statistics including independent sample t-test and analysis of variance (ANOVA) were used to assess the mean differences between the EE based on the type of universities. Besides, multiple linear regression was used to define the relationship between predictor variables and the mean of total score perception toward EE.

### 2.6. Ethical Consideration

The anonymity and confidentiality of all participants was maintained. An information sheet was provided to each participant describing the purpose of the study, confirming the privacy, anonymity, and confidentiality of participants, the voluntary nature of their participation, and providing instructions on how to rate the level of EE. Informed consent was implied by completing and returning the survey. Each participant was given a coding number without using a name. After completing the survey, the data was entered into the computer using this code. All files soft and hard copies were saved and coded not easily reachable without permission, to maintain confidentiality.

## 3. RESULTS

### 3.1. Participants' Demographics

A total of 200 participants who met the inclusion criteria were recruited for the study. Table 1 shows that more than half of them were males (58.5%; n=117); a large majority was in 18-23 years age group (78.5%; n= 157); a similar majority of students were single (75.5%/n=151); unemployed ( 74.5%/ n=149); and who had registered themselves to the college through a preparatory school (75.5%/n=151); more than half were in the 4<sup>th</sup> level of nursing education (55.5%; n=111); and a good number of students (45.5%/n =91) had a good cumulative average (GPA) in their nursing courses.

Table 1. Demographic characteristics of the participants (N=200).

Items	Frequency (%) (N=200)
Gender	
Male	117 (58.5)
Female	83 (41.5)
Age (Years)	
18-23	157 (78.5)
24-28	36 (18.0)
29-33	5 (2.50)
34-38	2 (1.00)
Academic level	
1 <sup>st</sup> Level	57 (28.5)
2 <sup>nd</sup> Level	25 (12.5)
3 <sup>rd</sup> Level	7 (3.50)
4 <sup>th</sup> Level	111 (55.5)
GPA	
Acceptable	11 (5.50)

Items	Frequency (%) (N=200)
Mild	61 (30.5)
Good	91 (45.5)
Very good	36 (18.0)
Excellent	1 (0.50)
University type	
Public	115 (57.5)
Private	85 (42.5)
Students' social status	
Single	151 (75.5)
Married	48 (24.0)
Divorced	1 (0.50)
Job-status	
Employee	51 (25.5)
Unemployed	149 (74.5)
How to register at the university	
Registration to the college through a preparatory school (Tawjihi)	151 (75.5)
Registration to the college through an Institute	18 (9.00)
Registration to the college through a distinguished employee	31 (15.5)

Note: N= Number, %= Frequency, GPA=Grade point average.

### 3.2. The Levels of Student's Perception of the EE and its Domains

Table 2 reveals that the mean score for the total participants was calculated to recognize their level. It was revealed that the average of (M=140.6, SD=25.22) were perceived as an excellent environment, while the average of (M=66.45, SD=9.55) were recognized that EE was very poor in the nursing faculties. However, the level of nursing students' perception of EE in baccalaureate programs is more positive than negative with a total score of (M=135.42, SD=22.10).

**Table 2.** The level of students' perception of the educational environment of the baccalaureate program in nursing faculties (N=200).

Level of the total score	DREEM total score	Mean of students' perception	SD
Very poor	0-50	66.45	9.55
Plenty of problems	51-100	84.32	11.55
More positive than negative	101-150	135.42	22.10
Excellent	151-200	140.55	25.22

Note: DREEM= Dundee ready education environment measure, SD= Standard deviation.

Table 3 shows the levels of student's perception of the EE of the baccalaureate program in nursing faculties based on DREEM domains. The first domain is related to student's perceptions of learning (n=106, 53%), with a mean score of (M=37+ 6.39), which corresponds with the domain score found for the level "teaching highly thought of".

The second domain was "students' perception of teachers" (n=89, 44.5%) with a mean score (M=28+5.3), which corresponds with the domain score found for the level of students 'moving in the right direction'. The third domain was "students' academic self-perceptions" (n=111, 55.5%) with a mean score (of M=20.4+4.5), which corresponds with the domain score found for the level of students who 'felt more on the positive side'. The fourth domain was students' perceptions of the atmosphere (n=100, 50%) with a mean score (of M=30.8+7.25), which corresponds with the domain score found for the level of students who found it 'a more positive atmosphere'. The fifth domain was students' social self-perceptions (n=103, 51.5%) of the students a score (M=18.1+4.2), which corresponds with the domain score found for the level 'Not too bad'.

**Table 3.** The levels of students' perception of the EE domains of the baccalaureate program in nursing faculties (N=200).

Students' perception of EE domains	Level of perception	Domain's score	Participants' level of perception	
			Mean (SD)	F (%)
Students' perceptions of learning	Very poor	0-12	37 (6.39)	106 (53%)
	Negative perceptions	13-24		
	Positive perception	25-36		
	Teaching highly thought of	37-48		
Students' perceptions of teachers	Abysmal	0-11	28 (5.30)	89 (44.5%)
	In need of some retraining	12-22		
	Moving in the right direction	23-33		
	Model teachers	34-44		
Students' academic self-perceptions	Feelings of total failure	0-8	20.4 (4.52)	111(55.5%)
	Many negative aspects	9-16		
	Feeling more on the positive side	17-24		
	Confident	25-32		
Students' perception of the atmosphere	A terrible environment	0-12	30.8 (7.25)	100 (50%)
	Many issues need changing	13-24		
	More positive atmosphere	25-36		
	Good feeling overall	37-48		
Students' social self	Miserable	0-7	18.1 (4.2)	103 (51.5 %)
	Not a nice place	8-14		
	Not too bad	15-21		
	Very good socially	22-28		

Note: N= Number, SD= Standard deviation, %= Frequency.

### 3.3. Difference between Public and Private Universities of Nursing Student's Perception Levels toward Educational Environmental Domains

An Independent sample t-test between groups was used to assess the differences in perceptions of nursing students toward EE domains between public and private universities. The private universities showed a higher total mean score than public with [ $t = -3.71$ ,  $df = 198$ ,  $p < 0.001$ ] as presented in Table 4.

**Table 4.** Nursing students' perception levels toward EE are based on the type of university (N=200).

Group differences	Faculties	N	Mean	SD	Df	t	P
Differences between groups	Public	115	130.81	19.91	198	-3.71	0.000**
	Private	85	141.99	22.63			

Note: \*Significance at  $< .05$ , \*\*significant at  $< .001$  two tailed, SD= Standard deviation, Df= Degree of freedom.

Independent t-test was used to assess the differences between nursing student's perception levels toward EE domains based on the type of university which revealed a significant difference in EE domain namely, students' perception of learning [ $t = -3.08$ ,  $df = 198$ ,  $p = 0.002$ ], Students perception of teachers [ $t = -1.16$ ,  $df = 198$ ,  $p = .248$ ] Students' academic self-perceptions [ $t = -4.05$ ,  $df = 198$ ,  $p < 0.001$ ], student's perceptions of the atmosphere [ $t = -4.90$ ,  $df = 198$ ,  $p < 0.001$ ], and student's social self-perception [ $t = -0.620$ ,  $df = 198$ ,  $p = 0.536$ ] as presented in Table 5.

**Table 5.** Independent t-test to assess nursing students' perception toward EE domains based on the type of university (N=200).

EE domains	Faculties	Mean (SD)	t	P
Students' perception of learning	Public	34.72 (6.64)	-3.08	0.002*
	Private	37.67 (6.77)		
Students' perceptions of teachers	Public	27.69 (5.21)	-1.16	0.248
	Private	28.56 (5.42)		
Students' academic self-perceptions	Public	19.29 (4.58)	-4.05	0.000**
	Private	21.81 (4.03)		
Students' perceptions of the atmosphere	Public	28.72 (6.96)	-4.90	0.000**
	Private	33.54 (6.74)		
Students' social self-perceptions	Public	17.95 (3.91)	-0.620	0.536
	Private	18.32 (4.49)		

Note: SD= Standard deviation, \* $p < .05$ , \*\* $p < .001$ , 2- tailed.



Multiple regression analysis revealed that the model significantly predicted a sizeable proportion of variance in students' perception toward EE ( $F= 2.97$ ,  $P<0.05$ ). The  $R^2=0.123$  and the adjusted  $R^2$  was 0.082. Table 6 displays the unstandardized coefficient, standardized coefficient, standard error, and t-test for each variable. Gender, age, and the target universities for the study were found to be significant predictors of EE. However, age, gender, and the target university significantly explained a considerable amount of the variance of students' perceptions toward EE. Students with higher age had a positive perception toward EE ( $B=0.162$ ,  $p<0.05$ ), gender of female had a positive perception toward EE rather than male ( $B=0.145$ ,  $p<0.05$ ), and the target university of students for private universities ( $B=0.736$ ,  $p<0.05$ ).

**Table 6.** Multiple linear regression to predict the demographical characteristics of the student's perception of the educational environment (N=200).

Items	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. error	Beta		
Gender of student	0.172	0.071	0.145	2.429	0.016*
Age of student	0.172	0.070	0.162	2.441	0.016*
Faculties involved in the study	-0.023	0.076	-0.019	-0.297	0.767
Academic level	0.082	0.091	0.188	0.893	0.373
Cumulative average	-0.044	0.046	-0.061	-0.949	0.344
The target universities for study	0.870	0.249	0.736	3.499	0.001**
Social status	0.044	0.091	0.034	0.486	0.628
Job-status	-0.129	0.092	-0.096	-1.409	0.161
How to register at the university	-0.127	0.062	-0.162	-2.047	0.042

Note:  $R^2=0.123$ , Adjusted  $R^2=0.082$ ,  $F=2.97$ ,  $P<0.001$ ; SE, standard error.\*  $P= 0.01$ ; \*\*  $P= 0.001$ .  
Dependent variable: perception toward the educational environment.

#### 4. DISCUSSION

This study aims at assessing the EE of baccalaureate nursing programs as perceived by nursing students. Nursing education is facing many challenges including increasing numbers of nursing students, lack of effective nursing education supported by an effective administrative and technical body; lack of an appropriate learning environment; lack of qualified nursing staff; tough competition; lack of the provision of appropriate nursing care following the frameworks of scientific studies (Harrison-White & Owens, 2018).

In this study, the student's perception toward EE for baccalaureate nursing programs in Iraq indicated a positive rather than negative students' perception of EE which is consistent with numerous research studies conducted and that verified the positive attitude toward EE (Hamid, Faroukh, & Mohammadhosein, 2013; Shrestha, Mehta, Mandal, Chaudhary, & Pradhan, 2019).

Educational environments have five domains, namely, students' perceptions of learning, students' perception of teachers, students' academic self-perceptions, students' perceptions of atmosphere, and students' social self-perceptions. The findings of the current study of the first domain revealed that the students had high thoughts about teaching which is congruent with the study that was conducted in Nepal in 2019 by Benkirane, Hamza, Sbihi, and Arabi (2019) who recruited 172 proficiency certificate levels (PCL) nursing students. Utilizing the DREEM tool for collecting the data, the study revealed an appreciation of gaining knowledge of surroundings at a positive level.

The second item regarding student's perception of teachers yielded the result that students followed teachers' directives which is congruent with Shrestha and Mahmood (2019) who conducted a descriptive study of 122 nursing students studying at Health Science in Nepal. The students presented a high-quality perception about the instructors who had been in an authoritative position. In another study (Parvan, Hosseini, & Bagherian, 2018), the highest average rates were related to the dimensions of interpersonal relations and teaching abilities in terms of utilizing teaching behaviors,, while the lowest average rates were found in the evaluation dimension. Concerning

the effectiveness of these teaching behaviors on learning, the dimensions of teaching ability and evaluation gained the highest and lowest average rates.

The third domain of students' academic self-perceptions indicated that students had a more positive feeling toward themselves. This finding is consistent with [Koirala, Koirala, and Neupane \(2019\)](#) study on academic self-perception which recruited 172 Proficiency Certificate Level (PCL) nursing students at Maharajgunj, and showed that students had positive feelings toward themselves. However, the current study finding is contradicted by [Shalaby and Aljezani \(2018\)](#) who did not show a statistically significant relationship between students' academic achievement and their clinical and educational environment perception.

The fourth domain related to student's perceptions of the atmosphere revealed a more positive perception. This finding is consistent with [Hamid et al. \(2013\)](#) who recruited 202 nursing students using the DREEM tool in Iran which showed that the results represented a more positive perception of the atmosphere. While the finding was contradicted by [Nicholls et al. \(2016\)](#) findings which indicated that the overall educational environment was more positive than negative finding. This result is comparable to other programs studied using the DREEM inventory in the country region and beyond. The results of this study provide insight into the program's strengths, such as institutional atmosphere, and areas of improvement, such as peer and faculty support.

The fifth domain was related to students' social self-perceptions which indicated that the students had not been too bad. This result was consistent with a study that was conducted by [Papastavrou, Dimitriadou, Tsangari, and Andreou \(2016\)](#) showing a satisfactory student perception of students- teacher relationship since there were no differences between university academic teachers and administration's qualifications in Iraq and Cyprus.

The findings of the current study revealed differences between public and private universities toward private ones because the provision of adequate infrastructure is one of the conditions for the opening of private universities in Iraq that has recently begun sweeping public universities. This finding is congruent with [Rehman, Ghias, Fatima, Hussain, and Alam \(2016\)](#) who found a significant difference in service quality between private and public sector universities, the private universities had higher mean score more than public universities.

The results of the study indicated that three demographical characteristics predict the students' perception toward EE including gender, age of the nursing student, and the target universities for the study whether public or private. These results are congruent with [Warne et al.'s \(2010\)](#) study of nine European countries, namely, Finland, Sweden, Belgium, England, Ireland, The Netherlands, Cyprus, Italy, and Spain, which aimed at comparing the factors and enhancing the learning experiences of student nurses. On the other hand, many studies have shown that different factors influence EE which had a direct impact on nursing education in the world.

## 5. CONCLUSION

The quality of an EE is considered an indicator of the effectiveness of an educational program on students' learning, motivation, and learning outcomes. Nursing as a profession is currently imposed to address the challenges created by globalization and to respond by forming international alliances that facilitate knowledge sharing to improve human health. This study revealed a positive perception of nursing students about the educational environment. A significant difference was found between students' perception level based on the type of university. Significant differences in EE domains were also found in the domains of students; perception of learning, academic self-perception, and students' perception of atmosphere. The main predictor factors that affect the EE were age, gender, and the type of the university. The results of the current study need to be read in light of the following limitations. First, fear of the universities shows their weaknesses or the policies they follow. Second, the lack of infrastructure and modern technology education creates a challenge in the sampling issues since the nursing students had busy schedules all time. Based on the findings of the current study, it is recommended to provide (1) appropriate nursing education requirements, with a suitable number of academics according to the number of students, where the ratio is 1:30 in theoretical courses and 1:15 in practical courses (2) review the nursing



curriculum and update books, regulations, and laws so that the student is part of the decision-making committee to contribute to setting a fair policy in nursing education.

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**Transparency:** The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

**Competing Interests:** The authors declare that they have no competing interests.

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## REFERENCES

- Adams, N. E. (2015). Bloom's taxonomy of cognitive learning objectives. *Journal of the Medical Library Association*, 103(3), 152-153. <https://doi.org/10.3163/1536-5050.103.3.010>
- Algoosy, M., Peters, K., Ramjan, L., & East, L. (2016). Exploring undergraduate nursing students' perceptions of working in aged care settings: A review of the literature. *Nurse Education Today*, 36, 275-280. <https://doi.org/10.1016/j.nedt.2015.08.001>
- Benkirane, L., Hamza, M., Sbihi, W., & Arabi, E. (2019). Perception of learning assessment methods by students at the end of their initial training at the faculty of dentistry of casablanca. *Education Research International*, 2019, 1-5. <https://doi.org/10.1155/2019/8463169>
- Biftu, B. B., Dachew, B. A., Tiruneh, B. T., Ashenafie, T. D., Tegegne, E. T., & Worku, W. Z. (2018). Effective clinical teaching behaviors views of nursing students and nurse educators at University of Gondar, Northwest Ethiopia: Cross-sectional institution based study. *Journal of Caring Sciences*, 7(3), 119-123. <https://doi.org/10.15171/jcs.2018.019>
- Buerhaus, P. I., Skinner, L. E., Auerbach, D. I., & Staiger, D. O. (2017). State of the registered nurse workforce as a new era of health reform emerges. *Nursing Economics*, 35(5), 229-237.
- Daniels, F. M., & Mthimunya, K. D. (2019). Student nurses' perceptions of their educational environment at a school of nursing in Western Cape province, South Africa: A cross-sectional study. *Curationis*, 42(1), 1-11. <https://doi.org/10.4102/curationis.v42i1.1914>
- Dimoliatis, I., Vasilaki, E., Anastassopoulos, P., Ioannidis, J., & Roff, S. (2010). Validation of the Greek translation of the Dundee ready education environment measure (DREEM). *Education for Health*, 23(1), 348.
- Dunham, L., Dekhtyar, M., Gruener, G., CichoskiKelly, E., Deitz, J., Elliott, D., & Skochelak, S. E. (2017). Medical student perceptions of the learning environment in medical school change as students transition to clinical training in undergraduate medical school. *Teaching and Learning in Medicine*, 29(4), 383-391. <https://doi.org/10.1080/10401334.2017.1297712>
- Ekstedt, M., Lindblad, M., & Löfmark, A. (2019). Nursing students' perception of the clinical learning environment and supervision in relation to two different supervision models—a comparative cross-sectional study. *BMC Nursing*, 18(1), 1-12. <https://doi.org/10.1186/s12912-019-0375-6>
- Enns, S. C., Perotta, B., Paro, H. B., Gannam, S., Peleias, M., Mayer, F. B., & Barelli, C. (2016). Medical students' perception of their educational environment and quality of life: Is there a positive association? *Academic Medicine*, 91(3), 409-417. <https://doi.org/10.1097/acm.0000000000000952>
- Erhabor, N. I., & Don, J. U. (2016). Impact of environmental education on the knowledge and attitude of students towards the environment. *International Journal of Environmental and Science Education*, 11(12), 5367-5375.
- Fego, M. W., Olani, A., & Tesfaye, T. (2022). Nursing students' perception towards educational environment in governmental Universities of Southwest Ethiopia: A qualitative study. *Plos One*, 17(3), e0263169. <https://doi.org/10.1371/journal.pone.0263169>

- Fleischer, A. R., Semenic, S. E., Ritchie, J. A., Richer, M. C., & Denis, J. L. (2016). Nursing unit leaders' influence on the long-term sustainability of evidence-based practice improvements. *Journal of Nursing Management*, 24(3), 309-318. <https://doi.org/10.1111/jonm.12320>
- Flott, E. A., & Linden, L. (2016). The clinical learning environment in nursing education: A concept analysis. *Journal of Advanced Nursing*, 72(3), 501-513. <https://doi.org/10.1111/jan.12861>
- Hamid, B., Faroukh, A., & Mohammadhosein, B. (2013). Nursing students' perceptions of their educational environment based on DREEM model in an Iranian university. *Malaysian Journal of Medical Sciences*, 20(4), 56-63.
- Harrison-White, K., & Owens, J. (2018). Nurse link lecturers' perceptions of the challenges facing student nurses in clinical learning environments: A qualitative study. *Nurse Education in Practice*, 32, 78-83. <https://doi.org/10.1016/j.nepr.2018.07.012>
- Koirala, M., Koirala, S., & Neupane, S. (2019). Perception of nursing students toward academic learning environment in a college of Kathmandu. *Journal of Institute of Medicine Nepal*, 41(1), 91-101. <https://doi.org/10.3126/jiom.v41i1.28607>
- Lafta, R., Al-Ani, W., Dhiaa, S., Cherewick, M., Hagopian, A., & Burnham, G. (2018). Perceptions, experiences and expectations of Iraqi medical students. *BMC Medical Education*, 18(1), 1-8. <https://doi.org/10.1186/s12909-018-1156-8>
- Mainul, H., Zulkifli, Z., Mohd Nasir, F. H., Majumder, M., Azim, A., Yusoff, M. S. B., & Myat Moe, T. A. (2017). Perception of tomorrow's health-care connoisseur and front-runners of their educational environment utilizing DREEM inventory in Bahasa Melayu version, the native language of Malaysia. *Australasian Medical Journal*, 10(5), 396-412. <https://doi.org/10.21767/amj.2017.2950>
- Mohsena, M., Debsarma, S., & Haque, M. (2016). Determining the quality of educational climate in a private medical college in Bangladesh via the 'Dundee Ready education environment measure' instrument. *Journal of Young Pharmacists*, 8(3), 266-274. <https://doi.org/10.5530/jyp.2016.3.17>
- Nabolsi, M., Zumot, A., Wardam, L., & Abu-Moghli, F. (2012). The experience of Jordanian nursing students in their clinical practice. *Procedia-Social and Behavioral Sciences*, 46, 5849-5857. <https://doi.org/10.1016/j.sbspro.2012.06.527>
- Nicholls, R., Hutton, C., Lázár, A., Allan, A., Adger, W., Adams, H., & Salehin, M. (2016). Integrated assessment of social and environmental sustainability dynamics in the Ganges-Brahmaputra-Meghna Delta, Bangladesh. *Estuarine, Coastal and Shelf Science*, 183, 370-381. <https://doi.org/10.1016/j.ecss.2016.08.017>
- Nordquist, J., Hall, J., Caverzagie, K., Snell, L., Chan, M.-K., Thoma, B., & Philibert, I. (2019). The clinical learning environment. *Medical Teacher*, 41(4), 366-372.
- O'Mara, L., McDonald, J., Gillespie, M., Brown, H., & Miles, L. (2014). Challenging clinical learning environments: Experiences of undergraduate nursing students. *Nurse Education in Practice*, 14(2), 208-213. <https://doi.org/10.1016/j.nepr.2013.08.012>
- Ogun, O. A., Nottidge, T. E., & Roff, S. (2018). Students' perceptions of the learning environment in two Nigerian medical schools offering different curricula. *Ghana Medical Journal*, 52(3), 116-121. <https://doi.org/10.4314/gmj.v52i3.2>
- Papastavrou, E., Dimitriadou, M., Tsangari, H., & Andreou, C. (2016). Nursing students' satisfaction of the clinical learning environment: A research study. *BMC Nursing*, 15(1), 1-10. <https://doi.org/10.1186/s12912-016-0164-4>
- Parvan, K., Hosseini, F. A., & Bagherian, S. (2018). The relationship between nursing instructors' clinical teaching behaviors and nursing students' learning in Tabriz University of medical sciences in 2016. *Education for Health*, 31(1), 32. <https://doi.org/10.4103/1357-6283.239044>
- Prashanth, G. P., & Ismail, S. K. (2018). The dundee ready education environment measure: A prospective comparative study of undergraduate medical students' and interns' perceptions in Oman. *Sultan Qaboos University Medical Journal*, 18(2), e173. <https://doi.org/10.18295/squmj.2018.18.02.009>
- Rehman, R., Ghias, K., Fatima, S. S., Hussain, M., & Alam, F. (2016). Students' perception of educational environment at Aga Khan University Medical College, Karachi, Pakistan. *Pakistan Journal of Medical Sciences*, 32(3), 720. <https://doi.org/10.12669/pjms.323.9562>

- Salifu, D. A., Gross, J., Salifu, M. A., & Ninnoni, J. P. (2019). Experiences and perceptions of the theory-practice gap in nursing in a resource-constrained setting: A qualitative description study. *Nursing Open*, 6(1), 72-83. <https://doi.org/10.1002/nop2.188>
- Shalaby, S., & Aljezani, A. T. (2018). Exploring the relationship between perceived educational environment and academic achievement among critical care nursing students. *Clinical Nursing Studies*, 7(1), 1-10. <https://doi.org/10.5430/cns.v7n1p1>
- Shrestha, A., & Mahmood, A. (2019). Review of deep learning algorithms and architectures. *IEEE Access*, 7, 53040-53065. <https://doi.org/10.1109/access.2019.2912200>
- Shrestha, E., Mehta, R. S., Mandal, G., Chaudhary, K., & Pradhan, N. (2019). Perception of the learning environment among the students in a nursing college in Eastern Nepal. *BMC Medical Education*, 19(1), 1-7. <https://doi.org/10.1186/s12909-019-1835-0>
- Victor, G., Ishtiaq, M., & Parveen, S. (2016). Nursing students' perceptions of their educational environment in the bachelor's programs of the Shifa College of Nursing, Pakistan. *Journal of Educational Evaluation for Health Professions*, 13(43), 10.3352. <https://doi.org/10.3352/jeehp.2016.13.43>
- Warne, T., Johansson, U.-B., Papastavrou, E., Tichelaar, E., Tomietto, M., Van Den Bossche, K., & Saarikoski, M. (2010). An exploration of the clinical learning experience of nursing students in nine European countries. *Nurse Education Today*, 30(8), 809-815. <https://doi.org/10.1016/j.nedt.2010.03.003>

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