

## Influence of the perceived educational environment on future career planning among nursing students in Egypt

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**Purpose:** The aim of this study was to examine attitudes and knowledge regarding career planning after graduation, as well as the perceived educational environment of a pediatric clinical course, among nursing students at Menoufia University in Egypt. This study also investigated the influence of the perceived educational environment on future career planning among nursing students. **Methods:** A descriptive cross-sectional study was used, with a structured interview questionnaire that included demographic characteristics, a section that measured students' attitudes and knowledge toward their career planning, and the Dundee Ready Educational Environment Measure Scale (DREEM). **Results:** The mean total score for the DREEM scale was 109.61, and most students perceived many areas within the program as more positive than negative. However, they had low levels of knowledge regarding career planning. **Conclusion:** Based on the findings of this study, further efforts should be made to stimulate students' interest in pediatric nursing, to integrate theoretical content with practice, and to improve their planning activities early during their study. It is important to engage students in discussions concerning their ideas and worries about factors they perceive as less enhancing and more threatening in clinical settings.

**Key words:** Pediatric; Nursing; Students; Education; Career choice

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## INTRODUCTION

The learning environment shapes many aspects of nursing students' knowledge about their future career choices [1]. This environment has been described as the perceived (circumstantial) events that take place within the teaching setting, whether a classroom, a laboratory, clinical area, or a department [2]. It also includes all activities experienced by both students and their teachers. Three components usually establish the basis for these perceptions: the physical environment, the emotional climate, and the intellectual climate [3]. These components strongly determine the outcomes of the learning process among students. They influence how, when, and where students engage effectively with their environment, and thus determine many aspects of the teaching and learning process, including learning outcomes and future career plans [4]. As each nursing course teaches students about a specific area of nursing care, students' future career choices might be significantly influenced by these experiences [5]. If students' experiences in a pediatric course are positive, it is more likely they will consider pediatric nursing units as their work area after graduation [6]. Hence, studying both the nature and the impact of the learning experience of nursing students on their

career choices after graduation is important, as it might improve students' ideation toward nursing specializations that have workforce shortages [7]. While other studies have addressed students' perceptions of the learning environment from a purely academic standpoint [8], this study also examined the effects of these perceptions on students' future career choices.

The learning environment is an interactive network of forces within teaching and learning activities. This network influences students' learning outcomes, which include academic achievements, experiences, and perceptions regarding the educators of the course and the specialization that the course covers [9]. In nursing education, teachers have paid particular attention to students' perceptions of the learning environment as a key factor determining their career choices to avoid further shortages in some areas of nursing [10], which might also shape the behavior of nursing students, their confidence, and their academic progress [11]. An effective learning program provides students with a variety of educational experiences, engages them in the real teaching process, respects the needs of the learners, and encourages their participation, which then results in a positive learning experience [12].

Career planning is an ongoing process through which an individual sets career goals and identifies the means to achieve them [13]. It is a process of systematically matching career goals and individual capabilities with opportunities for their fulfillment [14]. Career planning is not a one-time event but is rather a process that becomes part of the repertoire of skills and experiences that enables graduate nursing students to develop as professionals [5]. Educators, among other important key stakeholders such as employers and professional organizations, are challenged to guide students and incorporate career planning during their study [15]. As educators communicate with students, it is essential to consider students' values, interests, goals, needs, desires, and perceptions of different nursing specializations, all of which guide choices of the area of nursing work after the completion of education [16]. The clinical learning environment of each nursing course has been shown to have a direct impact on nursing students' perceptions of their profession and to facilitate professional grounding [17]. Certain areas, such as pediatric nursing, have been identified as popular and enjoyable for students, while others lacked popularity for students' future career plans, including aged care and psychiatric nursing [16]. Students tended to search for other areas to work after graduation, creating further shortages in these areas. Therefore, positive perceptions of students about courses on pediatric nursing, perceived well-being, and academic achievements could be used to increase the number of students who choose pediatric units after graduation [17]. In addition, these factors guide educa-

tors when measuring the quality of learning that occurs within this serious setting [18]. Therefore, this study addressed areas of limited knowledge about the effect of students' experiences in a clinical course on their career planning.

## 1. Purpose of Study

The aim of this study was to examine students' knowledge and attitudes toward career planning after graduation. It also aimed to examine the perceived educational environment of a clinical pediatric nursing course at Menoufia University in Egypt, and to investigate the influence of the perceived educational environment on future career planning among nursing students.

## METHODS

### 1. Study Design

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

### 2. Sample and Setting

A convenience sample consisting of all third-year pediatric nursing students ( $N=300$ ) in the academic year 2018-2019 were recruited for this study. The study was conducted at the Faculty of Nursing at Menoufia University in Shebin El-Kom City, Egypt. The inclusion criteria were students enrolled in a pediatric clinical course, who were willing to participate in the study after receiving a full disclosure of the study purposes and procedure. The exclusion criteria encompassed students who were not enrolled in the pediatric clinical course or were not full-time students at the college (e.g., RN-BSN students).

### 3. Instrument

#### 1) Personal characteristics

The first section in the study questionnaire asked about students' gender and age.

#### 2) Attitudes and knowledge regarding career planning

A structured section was adopted from the work of Balyaci and Özsoy [14] after receiving permission. It was used to assess students' attitudes and knowledge regarding their career planning. Students were asked to answer yes (1) or no (0) to attitude-related questions, such as the impact of marriage and having children on career planning, their intention to seek further education in the future, and their knowledge regarding developing a portfolio and job interview techniques. This sec-

tion consisted of seven questions. Higher scores indicated more positive attitudes toward seeking to promote their career in the future.

### 3) Dundee Ready Educational Environment Measure

The Dundee Ready Educational Environment Measure (DREEM) scale [19] was used in this study to measure the educational environment with permission from the authors. The internal consistency of the DREEM has been reported in the literature (Cronbach's  $\alpha = .93$ ) [20]. The Arabic version of the DREEM, which was translated and validated in Saudi Arabia, was developed without modification as a translation from the original English version [21]. The DREEM scale is specific to the unique environment experienced by students in medical and health care-related courses, such as nursing [22]. The DREEM can be used to highlight the strengths and weakness of educational institutions, to help modify the curriculum, and to evaluate the efficacy of a university program [23]. The DREEM instrument contains 50 items used to assess positive and negative issues concerning the educational environment. Each statement is scored from 0 to 4 on a 5-point Likert-style scale ranging from strongly agree to strongly disagree (4=strongly agree, 3=agree, 2=unsure, 1=disagree, and 0=strongly disagree). Nine negative items (4, 8, 9, 17, 25, 35, 39, 48, 50) are reverse scored. The 50 items have a maximum score of 200, which indicates an ideal educational environment. The questionnaire consists of five sections: students' perceptions of learning/teaching, teachers, academic self-perception, atmosphere, and students' social self-perception. The mean score of items on the questionnaire are classified as follows: mean scores of more than 3.5 are considered to indicate excellent outcomes, mean scores of 3.1-3.5 are positive, mean scores of 2.1-3.0 are aspects that require improvement, and items with mean scores  $<2.0$  indicate problem areas and should be examined more carefully [2]. The Cronbach's  $\alpha$  coefficient for the internal consistency of the DREEM scale in this study was .84, and the values for the subscales were as follows: the students' perception of learning/teaching, Cronbach's  $\alpha = .80$ ; teachers, Cronbach's  $\alpha = .85$ ; academic self-perception, Cronbach's  $\alpha = .78$ ; atmosphere, Cronbach's  $\alpha = .79$ ; and students' social self-perception, Cronbach's  $\alpha = .85$ .

### 4. Pilot Study: Testing Reliability of the Instrument

A pilot study was carried out among 30 students to test the clarity, feasibility, and simplicity of the study tools, as well as the time needed for data collection. No modifications were made based on the results of the pilot study. The subjects of the pilot study were excluded from the total sample to ensure the stability of the results. Reliability was tested by applying

the test-retest technique, and the Pearson coefficient value was 90.8%. The tools were applied and retested after 2 weeks. The Spearman rank correlation coefficient was .82.

### 5. Data Collection

Data were collected over a period of 8 months from October 2018 to May 2019. The researchers started data collection by explaining the purpose of the study, ensuring the privacy and confidentiality of data, and confirming that every student had the full right to withdraw at any time. The questionnaire was distributed to nursing students in clinical sections and seminars where students were in small groups. This was done because the response rate is higher in smaller groups than in large groups of students.

### 6. Data Analysis

Data entry, coding, and analysis were conducted using SPSS version 21 (IBM Corp., Armonk, NY, USA). Quantitative data were expressed as mean, standard deviation (SD), and range (minimum-maximum), while qualitative data were expressed as frequencies (n) and percentages (%). Descriptive statistics were used to describe the study sample characteristics and the results of the study questionnaire. The Student t-test was used to measure the impact of the perceived educational environment as measured by the DREEM on career planning among students.

### 7. Ethical Considerations

Ethics approval was obtained from the Ethical Committee of the Faculty of Nursing at El-Menoufia University (No. 1650/2018). Meetings were conducted with students to explain the purpose of the study, clarify the items of the questionnaire, and obtain oral consent. The students were informed about the privacy of their information and were assured that the information would be used for scientific research only. The study was voluntary and harmless. Students had the right to refuse to participate in the study or withdraw at any time. Formal written consent was obtained from all participants, who agreed to complete the study. No one had or will have access to the completed research questionnaires at any time during or after the study has been conducted, except the researchers of the study. No identifying information was collected from students. Participation was entirely voluntary and students who chose not to participate did not experience any coercion. The researchers explained that the results of this study could influence how the pediatric course is provided and how training in clinical settings can be improved to reflect

more positive views about the course. Data collected from students were preserved in a locked cabinet in the office of the principal researcher and shall be destroyed as per university protocols after 4 years.

## RESULTS

### 1. Characteristics of the Participants

The average age of the students in this study was 20.7 years (range, 19-22 years). The sample comprised both men and women, and women accounted for just over the 56.3% of the sample. Most students (42.3%) preferred being employed at a

specialized center, and just over one-quarter (26.0%) said that they were interested in being academic staff at a university (Table 1). Only a small percentage (less than 10%) indicated that they would choose to be nurses at hospitals or at community centers. Three-quarters of the students (75.0%), if they were to work at hospitals or centers, indicated that they would be interested in pursuing a managerial or supervisory position, including director of nursing services, head nurse, and shift supervisor, and 19.3% stated that they would be interested in becoming clinical instructors affiliated with a college. Only 15.3% of students indicated that they would be interested in working in a pediatric unit, as presented in Table 1.

**Table 1.** General Characteristics and Knowledge and Attitudes Regarding Career Planning after Graduation (N=300)

Item		n (%) or M±SD	
General characteristics	Age (year)	20.7±1.1	
	Gender	Male	131 (43.7)
		Female	169 (56.3)
Knowledge and attitudes toward career planning	Settings where I would like to work	Governmental hospital staff nurse	24 (8.0)
		Specialized center (cardiac, neurology, nephrology)	127 (42.3)
		Academic staff at a university	78 (26.0)
		School nurse	23 (7.7)
		Occupational health nurse	8 (2.7)
		Mother and child health nurse	18 (6.0)
		Technical institute of nursing	14 (4.6)
		Technical health institute	8 (2.7)
	In a clinical setting, the position I would like to fill is	Nurse educator	17 (5.7)
		Director of nursing services	28 (9.3)
		Head nurse	86 (28.7)
		Shift supervisor	111 (37.0)
		Clinical instructor (affiliated with a college)	58 (19.3)
	After graduation, I would like to work in	Pediatric unit	46 (15.3)
		Intensive care unit	49 (16.3)
		Operating room	68 (22.7)
		Maternity unit	49 (16.3)
		Psychiatric unit	27 (9.0)
		Surgical ward	11 (3.7)
		Medical ward	20 (6.7)
Neonatal intensive care unit		9 (3.0)	
Do you have knowledge about career planning?	No	189 (63.0)	
	Yes	111 (37.0)	
Do you think that you need to enroll in further education?	No	75 (25.0)	
	Yes	225 (75.0)	
Do you know how to develop a professional portfolio?	No	176 (58.7)	
	Yes	124 (41.3)	
Do you know how to write a curriculum vitae? *	No	158 (52.8)	
	Yes	141 (47.2)	
Total score		2.85±0.64	

\*Missing data were not included.

## 2. Students' Knowledge and Attitudes Regarding Career Planning

As shown in Table 1, most students (63.0%) were not aware of career planning. In addition, many of them (58.7%) reported having no experience in building a professional portfolio, but just below half of them (47.2%) said that they could write a professional curriculum vitae. The total mean score of knowledge and attitudes was  $2.85 \pm 0.64$ .

## 3. Findings of the Dundee Ready Educational Environment Measure Scale and Its Impact on Career Planning

Table 2 illustrates that the total score of the DREEM scale was  $109.61 \pm 24.31$ . The mean score for the learning/teaching dimension was  $25.09 \pm 6.37$ . The teachers dimension scored close to the midpoint ( $24.98 \pm 6.66$ ), and the mean score of the academic self-perception dimension was lower than the midpoint ( $19.38 \pm 5.85$ ). The atmosphere scale mean score was  $25.58 \pm 7.62$ , and the social self-perception dimension had a mean score of  $14.65 \pm 3.89$ . Participant characteristics were tested for any difference among their categories. The effect of gender of the student on the DREEM scores and the career planning were tested, and we found no statistically significant difference between the males and the females (Table 3). We also found that there was a statistically significant positive effect of the perceived educational environment on career planning

**Table 2.** Descriptive Findings of the Educational Environment for a Pediatric Nursing Course and Its Dimensions (N=300)

Scale	Categories	n (%)	M±SD	Range
DREEM	Very poor	6 (2.2)	109.61±24.31	30-169
	Significant problems	71 (25.7)		
	More positive than negative	172 (62.3)		
	Excellent	27 (9.8)		
Learning/teaching*	Abysmal	10 (3.5)	25.09±6.37	0-41
	In need of some retraining	84 (29.4)		
	Moving in the right direction	173 (60.5)		
	Model teachers	19 (6.6)		
Teachers*	Very poor	8 (2.8)	24.98±6.66	4-42
	Teaching is viewed negatively	97 (33.7)		
	A more positive approach	160 (55.6)		
	Teaching highly thought of	23 (7.9)		
Academic self-perception*	Feeling of a total failure	13 (4.5)	19.38±5.85	2-32
	Many negative aspects	76 (26.0)		
	Feeling more on the positive side	147 (50.3)		
	Confident	56 (19.2)		
Atmosphere*	A terrible environment	22 (7.5)	25.58±7.62	5-44
	There are many issues that need changing	117 (39.9)		
	A more positive atmosphere	127 (43.4)		
	A good feeling overall	27 (9.2)		
Social self-perception*	Miserable	17 (5.9)	14.65±3.89	1-24
	Not a nice place	103 (35.5)		
	Not too bad	145 (50.0)		
	Very good socially	25 (8.6)		

\*Missing data were not included; DREEM, Dundee ready educational environment measure.

**Table 3.** The Impact of Students' Gender on the Educational Environment of a Pediatric Nursing Course and Knowledge and Attitudes Regarding Career Planning

Variable	Categories	DREEM*			Knowledge and attitudes regarding career planning		
		M±SD	t	p	M±SD	t	p
Gender	Male	109.69±24.07	0.08	.940	2.86±0.59	0.03	.970
	Female	109.54±24.56					

DREEM, Dundee ready educational environment measure.

**Table 4.** The Impact of the Educational Environment of a Pediatric Nursing Course and Its Dimensions on Knowledge and Attitudes Regarding Career Planning

Variables	M±SD	Career planning			95% CI of the difference	
		t	df	p	Lower	Upper
DREEM	109.61±24.31	77.98	298	< .001	106.84	112.35
Learning/teaching	25.09±6.37	68.17	299	< .001	24.36	25.81
Teachers	24.98±6.66	64.87	298	< .001	24.22	25.73
Academic self-perception	19.38±5.85	57.36	299	< .001	18.72	20.05
Atmosphere	25.58±7.62	58.15	299	< .001	24.71	26.45
Social self-perception	14.65±3.89	65.20	299	< .001	14.21	15.09

CI, confidence interval; df, degree of freedom; DREEM, Dundee ready educational environment measure.

(Table 4), as related to their choices of future work after graduation.

## DISCUSSION

The present study explored students' preferences regarding the area, position, and department where they would work after graduation, and their career planning and choices in the future. Understanding students' knowledge and attitudes toward the educational environment is essential as it influences students' preferences after graduation. As pediatric nursing has a considerable shortage, it is necessary for undergraduate nursing students to develop positive attitudes based on logical knowledge about pediatric nursing. Therefore, the present study explored issues concerning how students perceived the clinical pediatric course educational environment and career planning. The information obtained through this part of the study showed whether there was a need for students to be oriented to career planning. This study examined the perceived educational environment among students enrolled in pediatric nursing course. Students did not report how satisfied they were with all elements of the pediatric course. Many students in this study reported that they were having positive experiences in their pediatric course; however, a considerable percentage of students reported dissatisfaction with the course and that the academic atmosphere was not conducive to learning. In addition, we found that students' perceptions of the educational environment of the clinical pediatric course had a significant effect on their career planning after graduation.

In the present study, one-fourth of the students stated that they wanted to work as a faculty member at a college. A reason for this perception may be students' observations of the hard-working conditions of nurses in hospitals and nurses' low position relative to the work that they accomplish. This finding agrees with that of another study [14], which reported

that 26.2% of students wanted to become academics, and a third study reporting that 38% of Turkish students wanted to become academics in the future [24]. A reason for this preference may be that nurses in the clinical setting engage in hard work and have a less favorable work atmosphere [25].

Many students also reported that they would like to work as head nurses or shift supervisors. Similarly, a study [24] reported that 21% of students wanted to become head nurses. Again, students favored managerial or supervisory roles over field work. Although this study did not address reasons for these choices, it is worthwhile to consider this issue in subsequent research.

Approximately 15% of students stated that they would like to work in pediatric areas, and this result may reflect negative experiences of academic pediatric courses, both theoretical and clinical. A reason for this may be that students perceived the pediatric course to be more difficult than other courses, with extra required assignments. In contrast to this finding, a study [14] found that most nursing students preferred pediatric units, which was explained by the positive experiences of students in the academic courses and with the educators.

We found that most of the students in this study thought about pursuing further or higher education. This finding agrees with an earlier study [25] reporting that 70% of Norwegian students wanted to enroll in further education, considering it as a professional step forwards that would improve their economic and career standing. Further education in nursing is very important because of the unprecedented growth in professional knowledge, rapid changes in the health care system, and the consequent changes in nurses' roles. Higher education for nurses might resemble the achievement of a professional goal, for which it is important to have role models in the form of peer support and mentorship [26]. This view also emphasizes that nurses usually seek higher education to become involved with clinical education and minimize clinical work [27]. Students reported planning to seek graduate degrees to

upgrade their competencies, which might contribute to the improvement of the profession [28].

The present study revealed that more than one-third of students had knowledge about career planning, while just below half of the students (41.3%) knew how to develop a professional portfolio and compose a curriculum vitae. These results are consistent with previous research [14] emphasizing that many students were trapped in their nursing scope and did not engage in further professional development due to a lack of experience or the absence of a solid opportunity to improve these skills during their study. Therefore, educators and clinicians can help students to develop appropriate and marketable skills, and to position students for future job and career opportunities.

The DREEM scores showed that the pediatric nursing course at Menoufia University could be classified as more positive than negative (Table 3). This result suggests that many students perceived many areas within the program as positive. However, there were areas that required attention, such providing electronically equipped facilities to facilitate watching appropriate videos and other educational requirements. The main concern in this study was the low mean scores of the total DREEM and subscales as compared to the scores reported in the literature. These findings further indicate that students in this study perceived their learning environment as missing some components, such as e-learning facilities and well-prepared educational classes, which could make the environment more conducive to learning and promote better learning in a less restrictive or stressful manner. Furthermore, there was an insufficient number of children in the pediatric clinical area with different diagnoses and over-crowding of healthcare workers, such as nurses, physicians, and other healthcare professionals in the unit or department.

In comparison, the overall DREEM scores reported from diverse nursing and health institutions were 115/200 and 110.3/200 [18], 114.3/200 [7], and 104.39/200 [21]. Despite differences in these studies, the mean score fell well within the range of 101-115, suggesting that perceptions of the environment were more positive than negative. However, the results of the current study are in contrast with those of other studies, which reported DREEM scores of 89/200 [29] and 92.6/200 [1].

Furthermore, the mean scores of the DREEM subscales were lower than those reported by many studies [30]. It is possible that these relatively low mean scores, although they reflected a more positive than negative environment in total, were influenced by students' choice of workplace, especially choices concerning working in pediatric units. Students viewed learning in the pediatric course as relatively unsatisfactory relative to their expectations, and this corresponded with the negative learning experiences. However, this study

did not ask students to clarify their expectations of the "ideal" situation. This can be interpreted as showing that students in the pediatric course perceived educational environment as more stressful when compared with other courses due to extra assignments and the difficult scientific material or topics of the pediatric course that were covered in a short period of time. Comparing areas of preference chosen by students for their future careers, pediatric nursing was selected as a specialization by nearly one-sixth of the students. This percentage would not be adequate to improve the numbers of nurses working in pediatric units, whether in hospitals, specialized centers, or community centers, if students keep their choices unchanged. Similar findings were reported by many studies [20], which reported relatively higher mean scores than found in this study, with a range of scores of 133-145 across health sciences students. For instance, in a study that assessed healthcare professions, midwifery students had a mean score of 135, pharmacy students had a mean score of 133, physiotherapy students had a mean score of 140, and dietetics and nutrition students had a mean score of 145 [20]. All subscales in the current study had mean scores that were lower than those reported by former study [17]. The source of dissatisfaction could have been certain incidents or the difficulties that students encountered in the course knowledge component. Dissatisfaction could also be attributed to the large number of assignments and the difficulty of exams. However, this cross-sectional study is limited in its ability to explore and explain its findings based on students' and instructors' experiences. Therefore, it was not clear whether students' negative views were related to previous clinical experiences, specific situations, or other factors not related to the course. This point requires further investigation or follow-up in later studies.

The effects of students' gender on the DREEM scores and career planning were tested, and we found no statistically significant difference between men and women (Table 3). Although this finding indicates that students' gender did not influence their career planning, it is in disagreement with another study reporting that female students perceived the educational environment to be significantly more positive than male students [20]. We also found a statistically significant positive effect of the perceived educational environment on career planning (Table 4), which appeared in their choices of future work after graduation. In other words, if students perceived the educational environment of a specific clinical area more positively and viewed it as less stressful, they tended to choose it for future career planning.

Based on the findings of this study, we suggest improving the educational environment by providing information to students about career planning, how to develop a professional portfolio, and how to choose their future career pathway be-

fore graduating. It is also equally important that nurse educators be aware of the importance of the educational environment in nurturing and developing positive attitudes toward each nursing specialization. Future studies with larger samples are needed. An additional exploration of nursing students' attitudes and knowledge toward career planning is recommended, especially in nursing specializations with personnel shortages, such as pediatric and neonatal nursing.

In summary, continuing quality improvement and innovation are essential for any educational institution. More emphasis should be given to students' perceptions of the learning environment, which can be used to initiate change and improvements.

## CONCLUSION

This study provided information on students' perceptions of their career planning and the learning environment of a pediatric nursing course. Students perceived the educational environment as more positive than negative, but one-third indicated the presence of "plenty of problems." The present study revealed that nearly one-fourth of students wanted to work as an academic at a college or university. Furthermore, pediatric nursing was only selected as a future specialization by 15.3% of students. No statistically significant differences were found between male and female students regarding their perceptions of the educational environment. In addition, many students did not report knowledge about career planning, which included building a curriculum vitae. In light of the findings of this study, it is recommended that further efforts should be made to stimulate students' interest in pediatric nursing, to integrate theoretical content with practice, and to improve their planning activities early during their study. It is important to engage students in discussions concerning their ideas and worries about factors they perceive as less enhancing and more threatening in clinical settings.

## Conflict of interest

No existing or potential conflict of interest relevant to this article was reported.

## Data availability

Please contact the corresponding author for data availability.

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