
A Cross-sectional Survey on the Correlation Between Clinical Learning Environment and Attitudes Toward Career Choice among Nursing Students

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Abstract

The attitude towards career choice is a key indicator for determining the quality of nursing education. Clinical learning environment is an important factor for nurses to complete their clinical practice programs. Moreover, it may influence career decision making among nursing students. This study aimed to investigate the correlation between clinical learning environment and attitudes toward career choice among undergraduate nursing students. A cross-sectional, correlational design was used in this study. A total of 219 nursing students were recruited at Nanjing University of Chinese Medicine, China. Data regarding baseline demographics, clinical learning environment scale (CLES) and general self-efficiency scale (GSES) were collected using a questionnaire survey. The results demonstrated that the attitudes of nursing students toward career choice were positively correlated to their clinical learning environment. The total score for the evaluation of CLES was 124.89 ± 17.85 points, with the average scores of 20.82 (SD=3.33) and 4.16 (SD=0.59) for the 6 dimensions and 30 items, respectively. Notably, the students considering nursing jobs had a significantly higher CLES score compared to students not considering nursing jobs ($P < 0.05$), for all the 6 dimensions such as interpersonal relationship, quality of teachers, working atmosphere, teaching methods, learning opportunities and organization support. To sum up, nursing students are more willing to pursue nursing jobs if their clinical learning environments are better. Thus, a greater number of participatory operations should be arranged by nurse educators when designing the clinical practice programs.

Key words: Nursing students; Career attitude; Clinical learning environment; Nursing education.

1. Introduction

According to data released by the National Health Commission of the People's Republic of China, the total number of registered nurses reached 3.507 million at the end of 2016, having increased by 71.2% compared to that in 2010 (Yang et al., 2017).

Nonetheless, at present, the total number of registered nurses is still insufficient. Nursing jobs are extremely demanding, and the nursing staff may face many challenges, including high-pressure environment, long working hours, workplace hazards, short staffing and low compensation. Moreover, increasing employment opportunities have caused many undergraduate nursing students to change their attitudes toward future career choices. Most of them have selected other

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occupations, resulting in a great shortage of nursing staffs (Bragg & Bonner, 2015; Wu et al., 2012).

2. Literature review

The attitudes of nursing students toward future career choice are influenced by many factors. Clinical practice is an inevitable educational stage for undergraduate nursing students to complete their degrees. It appears to be an important link between nursing theory and clinical work, which significantly affects the career choice of nursing students (Reid et al., 2017). Clinical learning environment is a crucial place for students to acquire nursing skills, socialize their roles and establish a sense of responsibility. The experience gained during clinical practice can be directly affected by the status of clinical learning environments. Moreover, an optimal clinical learning environment tends to exert a positive impact on the professional development of nursing students (Jamshidi et al. 2016). Thus, clinical learning environment is hypothesized to be an important factor influencing the future career choices of nursing students.

Numerous studies have been performed on the clinical environment of nursing students. For example, a qualitative interview has been conducted on 14 undergraduate nursing students regarding their clinical learning environments (Arkan et al., 2018). The results indicated that Turkish nursing students encountered numerous difficulties during the clinical learning process, and thus the guidance from nursing educators was of great importance (Arkan et al., 2018). Besides, satisfaction of the clinical settings as learning environments has been investigated on 463 undergraduate nursing students from three different universities in Cyprus. The results have suggested that nursing students are quite satisfied with their clinical learning environments, including the pedagogical atmosphere, Ward Manager's leadership style, premises of Nursing in the ward, supervisory relationship (mentor) and role of the Nurse Teacher (Papastavrou et al., 2016). Moreover, frequent communication between students and teachers has increased the students' satisfaction with clinical learning environments, thus strengthening their confidence to remain engaged in future nursing jobs (Lillibridge, 2007). Despite that, studies evaluating the clinical learning environment of Chinese undergraduate nursing students are relatively scarce (Chun-Heung & French, 1997; Guo et al., 2018; Liu et al., 2017). The relationship between clinical learning environment and the attitudes of nursing students toward career choice remains largely unknown. At

present, China is facing a looming nursing shortage, as the number of nurses (2.73 per 1,000 people) and the ratio of nurses/physicians (1.13) are comparatively low compared to other developed countries (Min et al. 2018). Therefore, a cross-sectional survey on this topic is urgently needed.

Study purpose

The purposes of this study were to: (i) investigate the determinants of attitudes toward career choice among undergraduate nursing students; (ii) examine the relationship between different attitudes toward career choice and self-efficacy level among nursing students; (iii) determinant the correlation between different attitude toward career choice and clinical learning environment among nursing students.

3. Methods

Study design and setting

This was a cross-sectional, descriptive, correlational study. The survey was conducted in 8 teaching hospitals from January to February 2018.

Study participants

Convenience sample collection method was used in this study. A total of 219 undergraduate nursing students were recruited in the present survey. The inclusion criteria were: (i) those who were enrolled in the School of Nursing since 2013; (ii) all the hospitals' teaching methods and workload were the same; (iii) those who had already been practicing for more than 8 months. The students who had not passed the examination in clinical practice were excluded.

Measurement tools

Based on a review of the literature, a self-designed questionnaire was adopted. The survey questions were as follows. (i) Attitudes toward career choice (considering or not considering nursing job) and baseline demographic information such as gender, age, place of origin, being an only child or not, current practice department, and the titles of internship tutors. (ii) Clinical learning environment scale (CLES) that sub-divided into 6 dimensions, including teaching methods, quality of teachers, learning opportunities, interpersonal relationships, working atmosphere, and organizational support. Specifically, there were 5 items for each dimension, resulting in a total of 30 items. Each item was scored based on a 5-point Likert-type scale, ranging from 1 (complete disagreement) to 5 (complete agreement) points.

The overall score in each dimension ranged between 5 and 25 points. (iii) General self-efficacy scale (GSES) consisted of 10 items, with a 4-point Likert-type scale ranging from 1 (completely incorrect) to 5 (absolutely correct) point. The total score for the sense of general self-efficacy ranged between 10 and 40 points, which was further classified into three levels: low level (10~20 points), intermediate level (21~30 points) and advanced level (31~40 points). The higher the score, the stronger the sense of self-efficacy. The overall internal consistency (Cronbach's alpha coefficient) of the questionnaire was 0.812.

Data collection

The survey was conducted in each teaching hospital using the well-designed questionnaire. Instructions for each questionnaire were unified, and all information related to how to fill the questionnaire out were explained. All the 219 distributed questionnaires were completed anonymously and returned immediately within 20 minutes. The response rate of the questionnaire was 100%.

Statistical analysis

Data recording and analysis were performed using EpiData software version 3.1 and SPSS Statistics software version 22.0, respectively. The statistical results were presented as frequency, composition ratio, and mean value \pm standard deviation (SD) for assessing the relationship between different attitudes toward career choice and the scores of clinical learning environment scale and general self-efficacy scale. Independent sample t-test was used to determine the association of clinical learning environment with different attitudes toward career choice. P value of >0.05 was considered statistically significant.

4. Results

Demographic characteristics of nursing students and their attitudes toward career choice

The mean age of all participants was 22.49 years (SD=11.97), and 88.1% of them were women (Table 1). Regarding the originating place of participants, 7.8, 19.6 and 72.6% were from large, medium-sized and county-level cities, respectively. There were 39 students (17.81%) who were from one-child families. With regard to the current practice department, 37.4% of students practiced in internal medicine wards, 28.3% of students practiced in surgical wards, 11.5% of students practiced in obstetrics and gynecology wards, 8.7% of students practiced in pediatrics wards, and 14.1% of students practiced in

other departments. Among the internship tutors of nursing students, 14.1, 42.0 and 43.9% of them were with junior, intermediate and senior titles, respectively.

For their attitudes towards career choice, students not considering nursing jobs were accounted for 48.2%, while 50.2% were the remaining students considering nursing jobs. The baseline characteristics of nursing students with the two different attitudes toward career choice were not statistically significant.

Evaluation of clinical learning environment scale (CLES)

In this survey, the total score of CLES among all nursing students was 124.89 (SD=18.75), the average score of the 6 dimensions was 20.82 (SD=3.33), and the average score of the 30 items was 4.16 (SD=0.59). More details on the CLES score of each item can be found in Table 2.

Assessment of general self-efficacy scale (GSES)

The mean score of GSES was 26.31 points (SD=18.75), and their level of self-efficacy was moderate (Table 3). The GSES scores of students with the two different attitudes toward career choice were 25.56 (SD=0.14) and 27.28 (SD=0.38), respectively. Notably, the overall score of students considering nursing jobs was significantly higher than that of students not considering nursing jobs ($t=2.64$, $P=0.022$). For the score of each item, students considering nursing jobs scored a higher GSES point compared to those not considering nursing jobs ($P<0.05$).

Relationship between CLES score and students' attitudes toward career choice

As demonstrated in Table 4, the CLES score of students considering nursing jobs was significantly higher compared to students not considering nursing jobs (130.43 [SD=12.42] vs. 119.95 [SD=12.82]; $t=2.10$; $P=0.037$). For the score of each dimension, students considering nursing jobs scored a higher point than students not considering nursing jobs. Specifically, the differences in CLES scores between students considering nursing jobs and students not considering nursing jobs for interpersonal relationship were 22.83 (SD=2.73) and 20.04 (SD=2.98), respectively ($t=2.44$, $P=0.015$), quality of teachers were 22.86 (SD=2.78) and 21.01 (SD=3.84), respectively ($t=2.42$, $P=0.016$), working atmosphere were 23.23 (SD=3.40) and 19.87 (SD=2.70), respectively ($t=2.84$, $P=0.005$), teaching methods were 21.33 (SD=2.95) and 19.70 (SD=2.73), respectively ($t=3.12$, $P=0.002$), learning opportunities were 20.80 (SD=3.07) and 19.35

(SD=2.75), respectively ($t=2.06$, $P=0.041$), and organization support were 20.56 (SD=3.04) and 19.88 (SD=3.03), respectively ($t=2.19$, $P=0.030$).

5. Discussion

Nurses are in high demand all over the nations. However, up to 49.77% of the nursing students have been engaged in non-nursing occupations after graduation (Kong et al., 2016). Therefore, nursing educators need to gradually cultivate a positive mindset on the perception of nursing profession among nursing students. Clinical learning environment is particularly important for the achievement of good clinical practice among nursing students (Zvanut et al., 2018). In general, nursing students have a positive perception on their clinical learning experience (Shivers et al., 2017). The results of this study showed that the scores of CLES differed significantly among nursing students with different attitudes of career choice. Evaluation of clinical learning environment by nursing students was significantly correlated with their attitudes toward career choice ($P<0.05$). Collectively, these findings indicate that a good clinical learning environment may exhibit positive effects on the attitudes of nursing students toward future career choice. Moreover, the interpersonal relationship and quality of teachers reached the highest scores, probably due to the following reasons. (i) The investigated subjects in this study were all undergraduate students. Zhu et al. (2005) have found that the score of interpersonal relationship is remarkably higher among undergraduate students compared to vocational college students ($P<0.01$). The interpersonal skills of undergraduate students are typically better than those of vocational college students, due to older age, broader knowledge and higher self-esteem. (ii) The studied hospitals had improved the quality of clinical nursing staffs in recent years. Some internship tutors are also part-time teachers in undergraduate colleges, and have become the backbone of clinical teaching. They can better understand the characteristics of nursing students and develop a unified teaching process for them (Mikkonen et al., 2017; Mueller et al., 2018). On the contrary, the score for learning opportunity was the lowest. Generally, nursing students have fewer opportunities to learn invasive operations such as venipuncture and intramuscular injection, or professional nursing practices such as tracheostomy care, drainage tube replacement and insulin pump usage (Clancy et al., 2007; Y. Kim et al., 2017). Therefore, internship tutors should guide the

explanation for invasive surgery, arrange more participatory operations and provide more learning opportunities. To the best of our knowledge, this is the first study describing the relationship between clinical learning environment and the attitudes of nursing students toward career choice.

6. Limitations

The main limitation of this study was the relatively small sample size of nursing students. Hence, the sample may not entirely be representative of the population at large. In addition, based on a nationwide perspective, the investigated hospitals were located within the same region. Thus, our findings do not fully represent the national hospital situation.

7. Conclusion

In summary, the attitudes of Chinese undergraduate nursing students toward future career choice are closely related to their clinical learning environments. Our study suggests that this could be solved by providing different clinical teaching and learning opportunities. Therefore, internship tutors should increase the practice arrangements of participatory operations for nursing students in order to improve their clinical learning environments. Consequently, nursing students will benefit from an effective learning process, leading to a more appropriate career decision.

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Table 1 Nursing students' characteristics and their attitudes of career choice (n=219)

Variables	Attitude of career choice		t/X ²	P-value
	Students not considering nursing jobs (n=109)	Students considering nursing jobs (n=110)		
	Mean (SD)	Mean (SD)	t	
Age	22.43 (1.11)	22.53 (0.89)	1	0.759
	N (%)	N (%)	X ²	
Sex			5	0.694
Male	12 (5.5)	14 (6.4)		
Female	97 (44.3)	96 (43.8)		
Hometown of students			2	0.3
Big city	8 (3.7)	9 (4.1)		
Medium-sized city	23 (10.5)	20 (9.1)		
County level city	78 (35.6)	81 (37)		
The only child			3	0.7
Yes	17 (7.8)	22 (10.0)		
No	92 (42)	81 (40.2)		
Current practice department			7	3.4
Internal medicine	45 (20.5)	37 (16.9)		
Surgical department	32 (14.6)	30 (13.7)		
Obstetrics and gynecology	10 (4.6)	15 (6.9)		
Pediatrics	10 (4.6)	9 (4.1)		
Other departments	12 (5.5)	19 (8.6)		
Titles of the internship tutors			8	1.7
Junior title	15 (6.8)	21 (19.1)		
Intermediate title	58 (26.5)	60 (54.5)		
Senior title	36 (16.5)	29 (26.4)		

SD=standard deviation

Table 2 Evaluation of clinical learning environment by nursing students (n=219)

Dimensions	Items	Mean (SD)
A. Interpersonal relationship		21.34 (3.12)
	1. Health care workers are on good terms	4.26 (0.59)
	2. The relationship between medical staff and patients is harmonious	4.33 (0.53)
	3. The relationship between students and internship tutors is harmonious	4.23 (0.50)
	4. Students are on good terms with other healthcare workers	4.20 (0.62)
	5. The relationship between students and patients is harmonious	4.32 (0.58)
B. Quality of teachers		21.34 (3.12)
	1. Internship tutors have a wealth of knowledge	4.32 (0.55)
	2. Internship tutors have consummate nursing skills	4.13 (0.67)
	3. Internship tutors have extensive work experience	4.26 (0.60)
	4. Internship tutors have a good service attitude	4.27 (0.43)
	5. Internship tutors have a passion for teaching	4.36 (0.58)
C. Working atmosphere		21.34 (2.93)
	1. Work in good order and organization	4.23 (0.57)
	2. The atmosphere of the department is harmonious and upward	4.27 (0.60)
	3. Nursing staff in the department unite and help each other	4.35 (0.61)
	4. Nursing staff can provide quality care to patients	4.26 (0.57)
	5. Department nurses love nursing work and remain optimistic	4.23 (0.63)
D. Teaching methods		20.88 (3.32)
	1. Internship tutors can guide nursing technology	4.06 (0.34)
	2. Internship tutors can teach students in accordance with their aptitude	4.23 (0.56)
	3. Internship tutors can come up with new problems	4.22 (0.76)
	4. Internship tutors can provide clinical knowledge	4.09 (0.58)
	5. Internship tutors are familiar with the internship program	4.28 (0.47)
E. Learning opportunities		19.80 (3.68)
	1. Students have the opportunity to practice basic nursing techniques	3.84 (0.57)
	2. Students have the opportunity to practice specialist nursing techniques	3.98 (1.02)
	3. Students have the opportunity to write a care plan together	4.13 (0.56)
	4. Students have the opportunity to participate in various clinical learning	4.01 (0.62)
	5. Students have the opportunity to care different diseases	3.84 (0.27)
F. Organizational support		20.19 (3.78)
	1. Medical staff attach great importance to clinical teaching	4.03 (0.88)
	2. The ability of students to work will be affirmed by leaders	4.01 (0.67)
	3. Nursing students are seen as part of the ward care team	3.92 (0.49)
	4. The head nurse often communicates with the nursing students	4.27 (0.73)
	5. The head nurse often helps students solve difficult problems	3.96 (0.55)

SD= standard deviation

Table 3 The general self-efficacy score of nursing students with different career choices (n=291)

Items	Attitude of career choice (Mean [SD])		t	P-value
	Students not considering nursing jobs(n=109)	Students considering nursing jobs(n=110)		
A1	2.34 (0.10)	2.58 (0.37)	6.54	<0.001
A2	2.57 (0.14)	2.69 (0.34)	3.41	0.001
A3	2.55 (0.16)	2.73 (0.39)	4.46	<0.001
A4	2.63 (0.08)	2.80 (0.46)	3.80	<0.001
A5	2.60 (0.21)	2.70 (0.39)	2.36	0.019
A6	2.59 (0.11)	2.83 (0.29)	8.08	<0.001
A7	2.46 (0.13)	2.65 (0.40)	4.72	<0.001
A8	2.58 (0.15)	2.69 (0.38)	2.81	0.005
A9	2.59 (0.16)	2.73 (0.41)	3.32	0.001
A10	2.65 (0.16)	2.88 (0.37)	5.96	<0.001
Total scores	25.56 (0.14)	27.28 (0.38)	2.64	0.022

SD=standard deviation

Table 4 Comparison of clinical learning environment evaluation by nursing students with different attitudes of career choice (n=291)

Dimensions	Attitude of career choice (Mean [SD])		t	P-value
	Students not considering nursing jobs(n=109)	Students considering nursing jobs(n=110)		
Interpersonal relationship	20.04 (2.98)	22.83 (2.73)	2.44	0.015
Quality of teachers	21.01 (3.84)	22.86 (2.78)	2.42	0.016
Working atmosphere	19.87 (2.70)	23.23 (3.40)	2.84	0.005
Teaching methods	19.70 (2.73)	21.33 (2.95)	3.12	0.002
Learning opportunities	19.35 (2.75)	20.80 (3.07)	2.06	0.041
Organization support	19.88 (3.03)	20.56 (3.04)	2.19	0.030
Total scores	119.95 (12.82)	130.43 (12.42)	2.10	0.037

SD=standard deviation