Self-efficacy and clinical competence of fourth-year nursing students: A self-reported study

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ABSTRACT

The current investigation aims to assess the level of clinical competence and self-efficacy of fourth-year nursing students, and its relationship to the students' demographic characteristics. To achieve this, the researchers used a quantitative-comparative approach. The respondents of the study were fourth-year nursing students from the University of Hail, Kingdom of Saudi Arabia, who were identified through convenience sampling with all fourth-year students. The clinical competence questionnaire and general self-efficacy scale tools were adapted for use in the study. Descriptive statistics were used to determine the participants' demographic characteristics, level of clinical competence, and level of self-efficacy. The Pearson r test was also utilized to explore the relationship between the study variables. Both the level of clinical competency (m = 3.50, SD = 1.252) and self-efficacy (m = 3.23, SD = 0.837) of the students was high. The Pearson r test indicated no significant correlation between the students' clinical competence level and gender. However, a significant correlation was noted between the students' clinical competence level and program type, civil status, and age. No significant correlation was found between the students' self-efficacy level and gender, civil status, or age, yet a significant correlation was found between the students' self-efficacy level and program type. A significant correlation was also noted between clinical competence level and self-efficacy level. The students had high clinical and self-efficacy levels, which nursing students must display to perform acceptably within standard roles and responsibilities in clinical settings. Hence, the fourth-year nursing students had the clinical capabilities to organize and implement the necessary courses of action.

1. Introduction

The healthcare environment has become the focus of health organizations around the world. This focus has made the nursing profession a major contributor influences on a transformation of healthcare delivery to ensure a safer environment, a more cost-effective system, and higher quality services (ANA, 2010). Indeed, the transformation has served as a challenge to nurse educators to hone future nurses to improve the safety of the healthcare system continuously. This aim will improve the education of students to ensure that new nursing entrants to the profession have the knowledge, skills, and abilities to provide safe, efficient, and effective nursing care. To achieve this, nurse educators must determine the areas that require improvement and assess the educational needs of nursing students to help those meet high levels of clinical competence and to provide quality in the educational process (Mohamadirizi et al., 2015).

Previous studies have reported that new nurses who have just graduated from nursing school have a low level of competence in terms of the real work of

clinical nursing practice, particularly in today's complex healthcare environment (Liou and Cheng, 2014). This competence is defined as the ability to solve complex problems using a combination of knowledge, attitude, and practical skills to meet the needs of public service (Mohamadirizi et al., 2015). ANA (2010) defined competence as "an expected level of performance that integrates knowledge, skills, abilities, and judgment." Further, self-efficacy helps students to firmly believe in their ability to respond to difficult or novel situations and manage any associated problems. Previous studies have indicated that self-efficacy is associated with students' professional competence (Mohamadirizi et al., 2015). Researchers such as Alavi (2014) have argued that self-efficacy is a good indicator to predict the performance of nursing students in clinical practice. As such, new graduate nursing students should have a high level of self-efficacy to feel competent in meeting the entry-level requirements in clinical areas and accept these challenging roles. To this extent, existing evidence has indicated a significant positive correlation between self-efficacy and job success (Abdal et al., 2015). Previous research has also shown that, in a new situation, individuals' self-efficacy is an essential factor that positively influences their ability to perform effectively (Karantzas et al., 2016). Further, Song and Yang (2016) reported significant correlations between self-efficacy and satisfaction with clinical practice.

This study aims to help educators improve their teaching strategies, and help future nurses advance their competencies in caring for clientele. To the knowledge of the researchers, few studies have been conducted to assess the clinical competence levels of nursing students in Saudi Arabia, which highlighted the need to conduct this study. Evaluation of nursing students' competencies and identifying related factors may help for improve the nursing curricula and clinical learning environment. It is indeed important for nursing educators to help their students to achieve high levels of clinical competence and self-efficacy in the attempt to identify the weak areas in their performance to provide quality in the educational process. Moreover, evaluating the competence of nursing students at postgraduate level is part of the quality assurance of nursing education. Hence, this research aims to assess and compare the levels of clinical competence and self-efficacy of fourth-year nursing students at the University of Hail, Kingdom of Saudi Arabia. Specifically, this research aimed to determine the level of clinical competence and self-efficacy among fourth-year nursing students, and its relationship with the students' demographic characteristics.

2. Methods

The researchers used a descriptive-comparative approach to answer the research questions. The respondents of this study were fourth-year students from the University of Hail, Kingdom of Saudi Arabia, who were accessed through convenience sampling with all fourth-year nursing students (male and female) enrolled in the second semester in the academic year 2015 to 2016. This research used the clinical competence questionnaire (CCQ), which is a scale developed by Liou and Cheng (2014) to measure the perceived clinical competence of upcoming graduate baccalaureate nursing students. The CCQ consists of four competency components with corresponding and specific competencies required for undergraduate nursing students, as follows: (a) nursing professional behaviors (16 competencies), (b) general performance (12 competencies), (c) core nursing skills (12 competencies), and (d) advanced nursing skills (six competencies). This scale is necessary because it provides educators in nursing schools and hospitals a preliminary way to understand the confidence of new nurses and nursing students in terms of their clinical performance. The instrument uses a five-point Likert scale, with item response scores ranging from 1 ("do not have a clue") to 5 ("known in theory, competent in practice without any supervision"). The total scores range from 46 to 230, with a higher score indicating an individual's self-perception of a higher level of clinical competence. The Cronbach's alpha for the entire CCQ was reported by the developed author to be .98, while the reliability of the tool in this study was 0.990.

In terms of determining the self-efficacy of the students, this study used the general self-efficacy scale developed by Schwarzer and Jerusalem (1995). This instrument uses a four-point Likert scale, ranging from 1 ("not at all true") to 4 ("exactly true"). This scale consists of 10 statements aimed to assess the strength of an individual's belief in his or her ability to respond to novel or stressful situations and deal with any associated obstacles. The scores for each of the 10 items are summed to give a total score. The higher the score, the greater the individual's generalized sense of self-efficacy. A high internal consistency was reported by the developed author, with alphas ranging from 0.82 to 0.93, while the reliability of the tool in this study was 0.925.

This research performed a pilot study with nine randomly selected nursing students (10% of the study sample) to ensure the applicability, clarity, and feasibility of the questionnaires. The students took around 15 to 20 minutes to fill the questionnaire. No modifications were made, and the results of the pilot study were included in the study results. Ethical approval was obtained from the scientific research committee at the University of Hail. The students were assured that their participation in the study was voluntary, that their courses would not be affected if they chose not to participate in the study, and that they could withdraw from the study at any time.

Moreover, no identifying data were collected from the students. Consent was established through the completion of the questionnaires.

2.1. Data analysis

Data cleanup and cross-checking were performed before the analysis. Data analysis in this study was performed using SPSS software, version 17. P-values lower than 0.05 were considered statistically significant. Descriptive statistics were used to understand the participants' demographic characteristics, level of clinical competence, and level of self-efficacy. The Pearson *r* test was used to detect the relationship between the study variables.

3. Results

Table 1 shows that seventy-two fourth-year nursing students participated in the study, divided equally between male and female students. The students' ages ranged from 21 to 23 (60%). Concerning gender, both male and female respondents had an equal share of 36 (or 50%). Sixty-three percent of the respondents were regular students, and 38% were bridging students. More than half (67%) of the respondents were married, and 33% were single.

Table 2 displays the level of clinical competence in fourth-year nursing students. The level of clinical competence of the study respondents was highest in terms of general performance (m = 3.57, SD = 1.224) and lowest in terms of nursing professional behaviors (m = 3.39, SD = 1.261). Overall, it was revealed that the fourth-year nursing students had a high level of clinical competence (m = 3.50, SD = 1.252).

Table 4 displays the correlation between the students' clinical competence level, self-efficacy level, and demographic characteristics. The results of the Pearson *r* test indicated no significant correlation between the fourth-year nursing students' clinical competence level and gender (p = 0.852, r = 0.022), yet a significant correlation between the students' clinical competence level and program type (p = 0.00, r = 0.418), civil status (p = 0.007, r = 0.317), and age (p = 0.01, r = 0.397). Regarding self-efficacy, the results indicated no significant correlation between the students' self-efficacy level and gender (p = 0.175, r = -0.162), civil status (p = 0.188, r =

0.157), and age (p = 0.061, r = 0.222), yet a significant correlation between the students' self-efficacy level and type of program in which they were enrolled (p = 0.30, r = 0.255). Overall, there was a significant correlation between clinical competence level and self-efficacy level (p = 0.000, r = 0.475).

Table 1: Demographic information of study participants (n= 72)

Demographic information	Frequency	Percentage
Age		
21–23	43	60
24–26	4	6
27–29	9	13
30–32	7	10
33–35	7	10
36–38	1	1
39–41	1	1
Gender		
Female	36	50
Male	36	50
Schooling program type		
Bridging (from an associate degree to nursing baccalaureate degree)	27	38
Bachelor of Science in Nursing regular student	45	63
Civil status		
Single	24	33
Married	48	67

Table 2: Clinical competence of fourth-year nursing students (n= 72)

Clinical competence	Mean	SD
1) Nursing professional behaviors	3.39	1.261
2) General performance	3.57	1.224
3) Core nursing skills	3.58	1.257
4) Advanced nursing skills	3.46	1.247
Overall clinical competence level	3.50	1.252

Table 3 displays the level of self-efficacy of fourth-year nursing students. The student respondents reported that they could solve most problems if they invested the necessary effort (m = 3.33, SD = 0.787). They likewise agreed that they could always manage to solve difficult problems if they tried hard enough (m = 3.14, SD = 0.861). Overall, it was revealed that the fourth-year nursing students had a high level of self-efficacy (m = 3.23, SD = 0.837).

Table 3: Distribution of self-efficacy mean scores among fourth-year nursing students (n= 72) (Schwarzer and Jerusalem, 1995)

Self-efficacy indicators	Total mean		Male		Female	
	Mean	SD	Mean	SD	Mean	SD
1) I can always manage to solve difficult problems if I try hard enough.	3.14	0.861	3.333	0.793	2.944	0.893
2) If someone opposes me, I can find means and ways to get what I want.	3.29	0.740	3.389	0.728	3.194	0.749
3) It is easy for me to stick to my aims and accomplish my goals.	3.24	0.911	3.417	0.806	3.056	0.984
4) I am confident that I could deal efficiently with unexpected events.	3.28	0.773	3.306	0.749	3.250	0.806
5) Thanks to my resourcefulness, I know how to handle unforeseen situations.	3.19	0.816	3.333	0.717	3.056	0.893
6) I can solve most problems if I invest the necessary efforts.	3.33	0.787	3.444	0.809	3.222	0.760
7) I can remain calm when facing difficulties because I can rely on my coping abilities.	3.18	0.845	3.167	0.910	3.194	0.786
8) When I am confronted with a problem, I can usually find several solutions.	3.22	0.876	3.250	0.906	3.194	0.856
9) If I am in a bind, I can usually think of something to do.	3.22	0.809	3.333	0.793	3.111	0.820
10) No matter what comes my way, I am usually able to handle it.	3.22	0.953	3.389	0.903	3.056	0.984
Overall self-efficacy level	3.23	0.837	3.336	0.811	3.128	0.853

Table 4: Correlation between students' clinical competence level, self-efficacy level, and demographic information

Demographic information	Clinical competence		Self-efficacy	
	Computed *r*	P-value	Computed *r*	P-value
Gender	0.022	0.852	-0.162	0.175
Program type	0.418	0.000*	0.255	0.030*
Civil status	0.317	0.007*	0.157	0.188
Age	0.397	0.001*	0.222	0.061
Overall			0.475	0.000*

*: p<.05

4. Discussion

The findings of the study indicated that the fourth-year nursing students had a high overall level of clinical competence. Based on the students' self-assessments, the students seemed to have great trust in their level of competence at the time of graduation. This may be attributed to the quality of clinical teaching effectiveness training that the students received and the high-fidelity clinical simulation equipment at the faculty. Further, this result may be due to the quality of clinical training and instructors' close observation of students' performance in the clinical area. These results agree with the study by Bifftu et al. (2016), which examined the clinical competence of nursing students in northwest Ethiopia. Overall, the researchers reported that about half of the study participants (48.7%) perceived themselves as having high clinical competence. In contrast, the result disagrees with Parsa-Yekta's et al. (2007) study conducted with 91 nursing students, which found that most students had moderate clinical competence. Moreover, the results of this study contradict Hassankhani's et al.'s (2015) research on the relationship between the learning motivation and self-efficacy of nursing students in Iran, which indicated that students' self-efficacy for professional nursing competency was at an average level.

The fourth-year nursing students reported a high level of self-efficacy, which could be linked to the quality of academic programs and the educational experience. Furthermore, the participants in this study stated that they could usually solve difficult problems if they worked hard enough, which may contribute real in high self-efficacy. This result agrees with the descriptive study performed by Karabacak et al. (2013), which aimed to determine the level of general self-efficacy among 100 undergraduate nursing students and examined the relationship between self-efficacy and skill development.

The results of the study further highlight that a high self-efficacy score led to greater academic achievement. However, the mixed-methods study by Abdal et al. (2015) assessing clinical self-efficacy among senior nursing students found that the level of self-efficacy was at a medium level. Similar to Abdal's et al. (2015) study, Kassem et al. (2015) examined nursing students at Mansoura University in Egypt and reported that these students had mild self-efficacy.

Statistically, the current study found no significant difference in the self-efficacy level between the fourth-year male and female nursing students. The same results were reported by Luckey-Smith (2013). In contrast, the present results disagree with the study by Zhang et al. (2015) in China, which examined the relationship between self-efficacy beliefs and achievement motivation, and found that the self-efficacy scores of the male student nurses were higher than those of the female student nurses. Further, the present study found no correlation between personal characteristics and self-efficacy. The same results were reported by Karabacak et al. (2013) and Luckey-Smith (2013), who studied the self-efficacy and stress of senior nursing students participating in a progressive simulation in a southeastern Tennessee University.

Moreover, the present study indicated a significant correlation between clinical competence level and self-efficacy. This result agrees with Rice (2015), who conducted a study to examine the predictors of successful clinical performance among nursing students studying an associate degree nursing program. The results of our study revealed significant relationships between self-efficacy and student-rated clinical competence. The same results were reported by Rice (2013), who found a statistically significant positive relationship between self-efficacy and clinical performance. In addition, Kim et al. (2014) reported a significant correlation between confidence level and overall competency level.

In general, the results of the present study indicate a significant correlation between the fourth-year nursing students' clinical competence level and demographic characteristics related to the type of program, civil status, and age, yet found no significant relationship with the gender of the students. These findings are reflected in Benner's (1984) "novice to expert" theory, which suggests that, with experience, a beginner can move from a position of novice understanding to one of increased competence. In contrast, these results disagree with Farshi et al. (2015), who reported no significant relationship between clinical competence and the variable of gender. Overall, this study found a positive correlation between self-efficacy and clinical competence. This finding suggests that nursing students are capable of performing clinical procedures with confidence in their capacity to regulate their own drive, behaviors, and social environment.

According to Mohamadirizi et al. (2015), self-efficacy is an important predictor of students' clinical performance. As such, clinical competence increases with high clinical self-efficacy. However, the present

findings disagree with the study by Rice (2013) that examined nursing students' clinical competencies and found no correlation between clinical and self-efficacy.

The fourth-year nursing students had high clinical and self-efficacy levels, which students must possess to perform acceptably within the standard roles and responsibilities of the clinical setting. As such, the fourth-year nursing students had the clinical capabilities to organize and implement the courses of action to manage challenging and new situations when required. Thus, it is recommended that the results of the present study can be used for educational nursing planning, and to reinforce the notion that clinical and self-efficacy training methods need to be included in nursing curricula.

However, this study had some limitations. The first limitation was that this study valued clinical competence with a self-assessment method, which may reduce the accuracy and objectivity of the evaluation method, as the nursing students who participated in the study may have given themselves unrealistic scores. However, the instrument was designed and used in this study as a self-assessment tool to measure perceived clinical competence, not to evaluate the performance-based competence of the students. Another limitation of this study derived from the use of a convenience sample, which limits the generalization of the results.

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Compliance with ethical standards

Conflict of interest

The authors declare that they have no conflict of interest.

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