Original Article

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Nursing Section

Learning Motivation and Self-efficacy towards Improved Clinical Performance in Undergraduate Nursing Students: A Cross-sectional Study

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ABSTRACT

Introduction: Learning motivation promotes academic achievement, satisfaction and education of students. Self-efficacy helps students overcome challenges associated with clinical nursing education. A gap remains in the literature related to learning motivation and self-efficacy in undergraduate nursing programs.

Aim: The purpose of this study was to examine the relationship between learning motivation and self-efficacy among undergraduate nursing students.

Materials and Methods: A cross-sectional, descriptive study was conducted on undergraduate nursing students from a public university in Saudi Arabia from February 2021 to April 2021. The Science Motivation Questionnaire II (SMQ-II) to assess motivation and General Self-Efficacy (GSE) scale to assess self-efficacy were used for data collection. Data was analysed using Statistical Package for the Social Sciences (SPSS) software version 26.0, bivariate analyses were used where needed and multiple linear regression analysis was conducted to examine the relationship between motivation levels and self-efficacy while controlling for demographic variables.

Results: A total of 110 undergraduate nursing students participated in the study. Most of the sample reported a slightly high level of both learning motivation with a mean of 75.5, range: 8-100 and self-efficacy with a mean of 29.3, range: 1-40. None of the demographic variables were significantly associated with either learning motivation or self-efficacy (p-value >0.05). Learning motivation was found to have a strong, positive and significant correlation (r-value=0.663, p-value <0.001) with self-efficacy. In regression, learning motivation was the only variable significantly associated with self-efficacy (β=0.655, p-value <0.05).

Conclusion: The findings demonstrated that motivation is critical in explaining attitudes, predicting consequences of actions, and directing behaviour to fulfill the goals of clinical courses. Self-efficacy is another important factor in student nurses' progress.

Keywords: Education, General self-efficacy scale, Science motivation questionnaire

INTRODUCTION

Nursing has undergone many changes in Saudi Arabia, but it is still in its early stages. According to the Ministry of Health's report in 2019, nurses account for approximately 41% of the public hospitals' workforce, of which 63% are Saudi people. Approximately 26,200 nursing graduates are expected to graduate between 2019 and 2027 in Saudi Arabia [1]. As a result, the government would need to hire around 185,722 expatriate nurses to meet the recommended ratio of one nurse per 200 Saudi people [1]. Recruiting expatriate nurses, however, can lead to a number of difficulties including competitive market, high turnover, financial burden and patient safety issues [2]. Therefore, a key strategic necessity for the Saudi government would be to develop and improve domestic nursing education programs and graduate more Saudi nursing students.

Education is a structured and controlled process of transferring socially relevant knowledge from one generation to next generation [3]. Approximately, 39 nursing programs have been established in Saudi Arabia to prepare students for delivering high-quality patient care [4]. The Saudi undergraduate nursing education is a five year program, including internship. The educational system in the country is not mixed gender, which may effect the efficacy of nursing prorgam [5]. Further, though the Arabic is the official language of Saudi Arabia, nursing education is performed in English, which may make it a main barrier for some students. Nurse educators play a critical role in creating a clinical learning environment that aids in the development of their students' abilities. They should also observe, maintain and set up a supportive clinical teaching-learning atmosphere that strengthens and fosters proficient nursing skills [6].

Like each field of education, nursing education requires motivation. Motivation refers to the method of inspiring individuals to take action in order to achieve a goal [7]. Evidence has shown that motivation promotes academic achievement, higher learning efficiency, innovation, satisfaction, anxiety reduction, continued education and education of qualified potential nurses [8]. Some authors have reported a significant positive correlation between learning motivation and academic achievement among students [9,10]. Further, an association between lack of motivation and stress among student nurses was reported [11]. Nursing educators are responsible for utilising various teaching methods and strategies aimed at motivating students to achieve their clinical course objectives and preparing them for future clinical practice [12].

Self-efficacy is another important factor in nursing education [13]. Self-efficacy is the belief in one's ability to plan and carry out steps necessary to achieve specific goals [14]. In many cases, students demonstrate a lack of self-efficacy regarding their clinical experiences [15]. They face many challenges during clinical learning, find clinical learning experiences stressful and, feel ignored and ineffective [16,17]. Students with low self-efficacy are also more likely to give up during challenging situations, whereas those with high self-efficacy are more likely to work harder towards solving challenges [18].

Learning motivation and self-efficacy are two critical variables for professional education that contribute to academic achievement [18]. Self-efficacy can also help individuals become more motivated, perform better and allow them to complete tasks at a higher level of efficiency and/or competence [13]. Numerous studies have investigated each variable separately [7,8,13]. Accordingly, some

evidence suggests that the aforementioned variables were related to increased academic success among students. For instance, a significant relationship was found between learning motivation and self-efficacy [18]. Similarly, exercise motivation was reported significantly associated with self-efficacy [19]. Recommendations based on this partnership can be used to develop new strategies for strengthening nursing competence in clinical settings.

Low motivation can affect both students and nurses' self-efficacy, which can negatively impact the safety of patient care. To our knowledge, no research has determined whether learning motivation is associated with self-efficacy in the context of Saudi Arabia, as the education system focuses mostly on theoretical courses and traditional teaching style. This knowledge gap can be expected to increase the number of nursing graduates who lack the requisite skills to provide high-quality healthcare. Therefore, the aim of the current study was to examine the relationship between learning motivation and self-efficacy among student nurses.

Study objectives

Authors believe that the findings derived from this study would contribute towards developing a well-structured curriculum for clinical courses and enhancing motivation and self-efficacy levels in clinical environments.

- To describe learning motivation and self-efficacy levels among a sample of Saudi student nurses and
- To examine the relationship between specific demographic variables, learning motivation and self-efficacy among Saudi undergraduate nursing students enrolled in clinical courses.

MATERIALS AND METHODS

This cross-sectional, descriptive study was conducted on a sample of nursing students from a public University in Saudi Arabia from February 2021 to April 2021. The study was approved by the Institutional Review Board located at King Saud University (No: KSU-HE-21-85). Participation was completely voluntary and informed consent was ensured.

Sample size calculation: The G*Power 3.1 tool required a minimum sample size of 110 subjects to run the multiple linear regression analysis. Sample was recruited using the convenience sample technique.

Inclusion criteria: Male and female students with good English proficiency and who were enrolled in undergraduate nursing clinical courses were included in the study.

Exclusion criteria: Students who chose not to participate or had no clinical experience were excluded from the study.

To satisfy the requirements of nursing profession, the program consisted of eight semesters and an additional internship year. During the first four semesters, students take general science courses, the English language and other courses. Over the next four semesters, they take more specialised courses such as medical, psychiatric, critical care, emergency and so forth. These courses are essential in nursing, so they take theoretical classes at the college and clinical practicals at hospitals. Then, one year clinical internship is required to help students gain as much information and skills as possible in several departments at hospitals. To become a registered nurse, students must pass the Saudi nursing licensure exam during or after the internship year [20].

Study Procedure

Science Motivation Questionnaire II (SMQ-II) to measure motivation: A structured survey was developed to determine demographic data (age, gender, semester level) and study variables, which included motivation and self-efficacy. Student nurses' motivation was measured using the SMQ-II [21]. The SMQ-II is a 5-point rating scale that consists of 25 questions with scores ranging from never (0) to always (4), with higher scores (100) indicating better motivation. The SMQ-II includes five factors: intrinsic motivation, self-determination, self-efficacy, career motivation and grade motivation. Five different items were used to measure each component. The SMQ-II has a reliability of 0.93 [21].

General Self-Efficacy (GSE) scale to measure self-efficacy: Self-efficacy was measured using the GSE Scale [22]. The GSE is a 4-point Likert scale that consists of 10 items. Scores range from not at all true (1) to exactly true (4), with the total possible score (40) indicating a high self-efficacy level. This scale had a Cronbach's alpha ranging from 0.76-0.90 [22]. The tool is still considered valid and reliable and has been evaluated recently, providing a high Cronbach's alpha value of 0.90 [23]. This study opted to use this scale given that the self-efficacy component of the learning motivation scale might not capture all facets concerning self-efficacy.

The link to the questionnaire was posted on social media to help collect data safely due to the precautionary measures for Coronavirus Disease-2019 (COVID-19). The SMQ-II includes five items related to students' self-confidence in science courses only, while nursing programs teach other specialised courses in addition to science courses, as explained before. Further, the SMQ-II assesses mainly self-confidence; a term that is conceptually separable from self-efficacy. According to Malureanu A et al., self-confidence "implies a person's professed capability to tackle situations effectively on his own without leaning on others" (p.3) [24]. However, self-efficacy is deeper in meaning and refers to a person's perception of the ability to accomplish a specific task or activity [25]. Due to the differences between the two terms, though they are used interchangeably in research, the GSE was used to provide more thorough data on self-efficacy.

STATISTICAL ANALYSIS

Data was analysed using SPSS software version 26.0 (IBM Corp.). Mode or mean imputations, depending on data type, were used to handle missing data. The semester level variable was changed into binary categories for main analyses. Frequency distribution and central tendency measures were utilised to describe categorical and continuous variables, respectively. Bivariate analyses including independent sample t-test and Pearson's correlation was used where needed. Multiple linear regression analysis was also conducted to examine the relationship between motivation levels and self-efficacy while controlling for demographic variables.

RESULTS

A total of 110 students completed the survey, majority (n=56) were in the age group of 18-20 years, with female (n=73) predominance, demographic characteristics of the sample were given [Table/Fig-1].

Characteristics	N	(%)
Age# (Years) M=20.6, SD=1.16		
18-20	56	(50.9)
21-22	47	(42.7)
23-24	5	(4.5)
Gender		
Male	37	(33.6)
Female	73	(66.4)
Semester level#		
1st level	0	(0.0)
2nd level	1	(0.9)
4th level	35	(31.8)
5th level	8	(7.3)
6th level	19	(17.3)
7th level	3	(2.7)
8th level	28	(25.5)

[Table/Fig-1]: Demographic characteristics of the sample (N=110).
M: Mean; SD: Standard deviation; #Some participants left the data blank, hence total of age and semester level is not 110

As slightly high level of both learning motivation (M=75.5, SD=18.2, range: 8-100) and self-efficacy (M=29.3, SD=6.35, range: 1-40) was reported. Details regarding the learning motivation subscales are available in [Table/Fig-2].

Subscale	Mean±SD
Intrinsic motivation	14.1±4.28
Career motivation	16.3±4.03
Self-determination	14.9±4.14
Self-efficacy	14.4±4.38
Grade motivation	15.8±4.07

[Table/Fig-2]: Descriptive statistics of learning motivation subscales.
SD: Standard deviation

Bivariate and Multivariate Relationships

[Table/Fig-3] showed that neither gender nor semester level independent sample t-test display significant differences in both learning motivation and self-efficacy means (p-value >0.05).

Variable mean differences (t-test)	Binary categories	Learning motivation (Mean±SD)	p-value	Self-efficacy (Mean±SD)	p-value
Gender	Male	72.64±17.99	0.217	28.32±6.96	0.224
	Female	77.20±18.24		29.89±6.01	
Semester level	1st-4th	77.55±17.93	0.306	29.53±6.95	0.786
	5th-8th	73.98±18.44		29.20±5.83	

[Table/Fig-3]: Mean differences between learning motivation, self-efficacy, and some variables.
SD: Standard deviation; *p-value <0.000

According to Pearson's correlation test, age was not significantly associated with either learning motivation or self-efficacy (p-value >0.05). However, learning motivation was found to have a strong, positive and significant correlation (r=0.663, p-value <0.001) with self-efficacy [Table/Fig-4]. All demographic factors with learning motivation were subjected to multiple linear regression analysis to help identify predictors of self-efficacy [Table/Fig-5]. Learning motivation was only found to be significantly associated with self-efficacy (β=0.655, p-value <0.05). The regression model was found to be significant {F (4, 105)=21.526, p-value <0.05, R^2=0.451}.

Variables	Age	Learning motivation	Self-efficacy
Age	1	-	-
Learning motivation	0.015	1	-
Self-efficacy	0.091	0.663*	1

[Table/Fig-4]: Correlations between major variables and some demographics.
*p-value <0.001

Variables	Unstandardised coefficients		Standardised coefficients	Sig.	Model summary	
	B	Std. Error	Beta		R^2	p-value
Constant	2.780	9.179	-	0.763	0.451	0.001*
Age	0.493	0.481	0.090	0.308		
Gender	-1.037	1.110	-0.077	0.352		
Semester level	0.320	1.213	0.025	0.792		
Learning motivation	0.229	0.026	0.655	0.001*		

[Table/Fig-5]: Multiple regression analysis for variables associated with self-efficacy.
*p-value <0.05

DISCUSSION

The current study found that participants had a high degree of motivation in clinical education. The education system does not allow combined classes for male and female students. As such, male student nurses end up having most of the clinical assignments at accessible hospitals, whereas female students perform their clinical work at the college where they receive regular input from faculty members. In a cross-sectional study conducted among Swedish student nurses attending a nursing program, motivation was ranked higher in the first and last semesters because of the expectations of becoming a nurse [26]. Notably, scores on motivation level reported herein were high during the first four semesters, perhaps due to the content of practical courses taught during these semesters. Furthermore, the Saudi nursing program is five years long, whereas the Swedish nursing program is only three years long. This could have promoted a decrease in learning motivation among Saudi student nurses over time. Therefore, their results could be limited to the sample and program used in their study.

The current study found high self-efficacy among students, which could be linked to the enhanced skills they learn over the semesters. However, junior students demonstrated higher self-efficacy than senior students in their final semester. After reviewing the literature, authors showed that this result was similar to the findings of study done by Abdal M et al., [27] but inconsistent with study by Van Horn E and Christman J who found that senior students had a higher degree of self-efficacy than juniors [28]. The present results might have been influenced by anxiety among senior students resulting from the lack of clinical training due to the COVID-19 pandemic. Although earlier levels have virtual emulators that are appropriate for the content they are learning, this may be difficult to employ among students in their final level. The lack of necessary resources can trigger low self-efficacy among senior student nurses who likely need more specialised and developed resources to meet their educational requirements.

Learning motivation was found to be positively associated with self-efficacy in clinical environments, which was similar to international reports [29,30]. Students' improved learning motivation can be linked to increased self-efficacy in professional nursing practice [18]. Indeed, the aforementioned study demonstrated a significant relationship between learning motivation and self-efficacy among students attending Tabriz University of Medical Science, Tabriz, Iran. In the same study, authors also reported professional or career motivation factor to be the highest influencing factor, which was similar to present study findings. However, the above study only included senior student nurses, which might have limited results to that particular group. The current study, on the other hand, involved student nurses from all levels who had taken clinical classes in order to provide outcomes that could be applied throughout the college. Accordingly, the present findings suggest that faculty members at Saudi nursing programs should improve assessment methods and clinical skills to help boost students' academic performance.

Learning motivation was found to be significantly and positively associated with self-efficacy in the clinical environment. This emphasises the importance of improving educational laboratory quality to meet students' learning requirements. Future research should focus on methods that can help simulation laboratories achieve better educational outcomes. Furthermore, available resources on learning motivation and its impact on students' self-efficacy in clinical education may be limited. Therefore, addressing perceived gaps between theory and practice in the clinical environment can help enhance educational outcomes.

Limitation(s)

Some limitations of the current study are worth noting. Convenience sampling method was used in the present study, which might have lead to sampling bias that restricts results to the study sample. Furthermore, compared to longitudinal studies, cause-and-effect associations are often difficult to report with a cross-sectional research design. Another limitation can be the study's location, which may make the findings difficult to generalise. Therefore, authors recommend future research to be conducted on a larger sample.

CONCLUSION(S)

The present study determined that motivation had a positive relationship with self-efficacy in clinical education. Two important variables for professional learning that contribute to academic achievement are self-efficacy and motivation. Motivation is critical in explaining attitudes, predicting consequences of actions and directing behaviour to fulfill the goals of clinical courses. Self-efficacy is another important factor to assess nursing students' progress. The meaning of self-confidence and self-efficacy are theoretically different and may cause some confusion, researchers should study them with caution. More research on strategies for improving motivational and self-efficacy among nursing students is therefore recommended.

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