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Satisfaction and Self-Confidence of Nursing Students with Simulation Teaching

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ABSTRACT

Objectives: In recent times, simulation has turned as a vital element of nursing education. Hence, this study aims to reveal the satisfaction of nursing students and their self-confidence gained through simulation teaching adopted at a Saudi University.
Methods: A descriptive study design was adopted in this study. A total of 80 final year (Level 7) undergraduate female nursing students of College of Applied Medical Sciences, at King Khalid University (KKU), Saudi Arabia were selected using convenience sampling. This study was carried out during the academic year of 2019-2020. The data was collected using questionnaire named 'Student satisfaction and Self-confidence in Learning' from the participants following simulation session. The responses obtained were subjected to the statistical analysis using IBM SPSS version 20.
Results: The results indicated that the overall satisfaction (mean=4.60) and self-confidence (mean=4.46) in learning with simulation teaching among nursing students of KKU is observed as high. All items of satisfaction dimension are significantly associated with overall satisfaction of nursing students. However, only two items of self-confidence dimension showed no significant association with overall self-confidence. A strong positive correlation is observed between the satisfaction and self-confidence in learning through nursing simulation.
Conclusion: Nursing students are highly satisfied and gained confidence through simulation teaching. These students have enjoyed the simulation teaching and are confident in developing the required knowledge and skills from the nursing simulation. Therefore, policymakers should train their instructors in simulation teaching in nursing education and encourage them for increasingly use of simulation teaching.

Keywords: Nursing students, Satisfaction, Self-confidence, Simulation, Saudi Arabia.

INTRODUCTION

Simulation has been recognized as a valuable teaching method in nursing curriculum which influences the learning, improvement of competencies, self-confidence, and safety [(1)]. It is a situation made to reflect clinical practice as adopted in real settings. It can be applied to teach theory, evaluation, and clinical skills. It often highlights the application and combination of knowledge, skills, and critical thinking [(2)]. The simulation has been considered as an interactive teaching-learning method in nursing education, and it permits students to repetitively perform their clinical skills till their expertise improve [(3)].

With simulation, learners are afforded with the opportunity to improve cognitive, affective and psychomotor skills

with various clinical scenarios in a safe and supportive environment [4,5]. Through such simulation methods, students can apply their theoretical knowledge, learn from errors without harming the patients, learn from their peers, and bridge the gaps between knowledge and clinical practice [6,7].

Various researchers have been used different models of simulation to teach the nursing students [8,9] Clinical setting can be simulated using various simulation models such as standardized simulated patients, task trainers, full-body mannequins, hybrid simulation, or virtual generated simulation, that enhance students' learning [8,9,10]. Moreover, confidence in nursing is a crucial quality of professional caring that develops trust and interaction between nurses and their patients [11]. Simulation in nursing education builds the self-confidence in nursing students before treating real patients. Further, positive students' perception is required for a successful simulation program [12]. Another study also found that the satisfaction of nursing students with their learning was high, and their self-confidence had improved from the clinical simulation [13]. However, there is no significant variation in confidence level among the nursing students who attended the traditional and simulation instruction [14].

Furthermore, various studies have evaluated the nursing students' critical thinking, satisfaction, and their self-confidence over nursing simulation across the globe [12,15-20]. In recent times, several studies have revealed nursing students' satisfaction, self-efficacy, knowledge, critical thinking, and self-confidence with simulation teaching practiced among universities in the Saudi Arabian context [13,21-23]. To add value to the existing literature, this study intended to reveal the nursing students' satisfaction and their self-confidence in learning with simulation teaching in a Saudi higher education environment.

MATERIALS AND METHODS

Design and Setting

A descriptive study design was adopted to assess the satisfaction of nursing students and their self-confidence in learning with simulation teaching adopted in College of Applied Medical Sciences, at King Khalid University (KKU), Saudi Arabia. This study involved a convenience sample of 80 final year (Level 7) undergraduate nursing students of KKU. All participants are female with the age group of 22-23 years. This study was conducted during the academic year of 2019-2020.

Procedure

In this study, the simulation teaching was conducted in the simulation lab in the College of Applied Medical Sciences at KKU. Currently, the scenario-based tasks are incorporated into the nursing program. All the participants were instructed with the forthcoming activities by one week before the simulation teaching sessions. All the students have participated in simulation teaching sessions. In these sessions, two faculty members contributed as a facilitator and an operator. The time duration for each simulation teaching session is fifteen minutes. While pre-briefing, the students were educated to use appropriate nursing intervention matching the scenario given in the simulation teaching session. Following stimulation, the participants should attend the debriefing sessions that last for 30 minutes. Immediately after the debriefing session, all the participants were administered with a questionnaire named "Student satisfaction and Self-confidence in Learning (SSS)" prepared by National League of Nursing (NLN, 2016) using the paper-based method [24].

Instrumentation

The questionnaire used in this study consists of two dimensions that include satisfaction (05 items), and self-confidence (08 items) in learning through simulation. The level of agreement of participants to each item was expressed in a five-point

Likert scale (i.e., 1-strongly disagree, 2-disagree, 3-undecided, 4-agree, 5-strongly agree). Besides, demographic information of the nursing students was collected.

Statistical analysis

Descriptive statistics were used to describe the level of satisfaction and self-confidence in learning among nursing students. The internal consistency of all items of the questionnaire was measured by Cronbach's alpha reliability test. This study used Confirmatory factor analysis (CFA) to test the validity of the questionnaire. Spearman correlation was applied to measure the relationship between satisfaction and self-confidence in learning of nursing students. Further, the association between each item of satisfaction dimension and overall satisfaction, as well as each item of self-confidence dimension and overall self-confidence in learning was found using Chi-square test. Statistical analysis was done using IBM SPSS version 20.

RESULTS

While reviewing the results, the overall alpha coefficient value is observed as 0.901, which denoted that the dimensions measuring the concept of Student satisfaction and Self-confidence in Learning (SSS) could be graded as 'excellent' [25,26]. Therefore, it is inferred that the questionnaire is a reliable one. Also, the Cronbach's alpha value for individual dimensions such as satisfaction and self-confidence are found as 0.808 and 0.842, respectively (Table 1).

Table 1:Reliability and Validity of the scale

Items	Cronbach's Alpha	No of items
Satisfaction	0.808	5
Self-Confidence	0.842	8
Overall	0.901	13

Also, Table 2 showed the common communalities of the questionnaire used. All the items under satisfaction and self-confidence were found with the value of more than 0.600 except the two items under self-confidence, which were observed with the value of less than 0.600. While applying the factor analysis with Varimax rotation, the total variance explained the sum of squared loadings is found to be as 73.67%. Further, it extracted 13 items, which collectively described 73.67% of the variance in the satisfaction and self-confidence of female nursing students with simulation teaching in nursing education.

Table 2: Factor Analysis of Responses to Self-Confidence and satisfaction (n=80)

Communalities	Extraction
The teaching method used in this simulation were helpful and effective	0.693
The simulation provided me with a variety of learning material and activity to promote my learning the medical surgical curriculum	0.773
I enjoyed how my instructor taught the simulation	0.674
The teaching material used in this simulation were motivating and helped me to learn	0.671
The way my instructor taught the simulation was suitable to the way I learn	0.719
I am confident that I am mastering the content of the simulation activity that my instructor presented to me	0.800
I am confident that this simulation covered critical content necessary for the mastery of medical surgical curriculum	0.638
I am confident that I am developing the skills and obtaining the required knowledge from the simulation to perform necessary tasks in a clinical setting	0.662
My instructors used helpful resources to teach the simulation	0.597
It is my responsibility as the students to learn what I need to know from the simulation activity	0.601
I know how to get help when I do not understand the concepts covered in the simulation	0.633
I know how to use simulation activities to learn critical aspects of these skills	0.598
It is the instructor's responsibility to tell me when I need to learn of the simulation activity content during class time	0.777

Table 3 represents the descriptive statistics of each item under the dimensions such as satisfaction and self-confidence. While reviewing the results, the overall mean score of responses by female nursing students towards their satisfaction towards simulation teaching is observed as 4.60. The mean score of each item under satisfaction dimension ranged from 4.50 to 4.73. Furthermore, the highest mean score of 4.73 is observed for the item under the satisfaction dimension, i.e., "I enjoyed how my instructor taught the simulation". On the other hand, the item under satisfaction

dimension "The way my instructor taught the simulation was suitable to the way I learn" is observed with the lowest mean score of 4.50. Besides, the overall mean score of self-confidence of female nursing students with simulation teaching is reported as 4.46. The mean score of each item under self-confidence dimension ranged from 4.30 to 4.60. Under self-confidence dimension, the item "I am confident that I am developing the skills and obtaining the required knowledge from the simulation to perform necessary tasks in a clinical setting" is found with the highest mean score of 4.60. In contrast, the item with the lowest mean score (4.30) is observed as "It is the instructor responsibility to tell me when I need to learn of the simulation activity content during class time".

Moreover, Chi-square results observed that there is a significant association between all items under satisfaction dimension and overall satisfaction of nursing students towards simulation ($p<0.05$). On the other hand, only two items under self-confidence dimension failed to show a significant association with nursing students' overall self-confidence gained through simulation teaching ($p>0.05$). In contrast, all remaining items showed a significant association with nursing students' overall self-confidence ($p<0.05$) (Table 3). Besides, Spearman's rho correlation coefficient value of 0.821 showed a significant strong positive correlation between satisfaction and self-confidence in learning experienced by nursing students with simulation teaching ($p<0.05$).

Table 3: Descriptive statistics and Chi-square results

Items	Mean ± SD	Chi-square
Satisfaction with current learning (Overall 4.60 ± 0.487)		
The teaching method used in this simulation were helpful and effective	4.67 ± 0.479	19.875*
The simulation provided me with a variety of learning material and activity to promote my learning the medical surgical curriculum	4.53 ± 0.681	45.345*
I enjoyed how my instructor taught the simulation	4.73 ± 0.521	46.341*
The teaching materials used in this simulation were motivating and helped me to learn	4.57 ± 0.817	59.318*
The way my instructor taught the simulation was suitable to the way I learn.	4.50 ± 0.682	37.083*
Self-confidence in learning (Overall 4.46 ± 0.437)		
I am confident that I am mastering the content of the simulation activity that my instructor presented to me.	4.40 ± 0.675	45.667*
I am confident that this simulation covered critical content necessary for the mastery of medical surgical curriculum.	4.47 ± 0.776	60.000*
I am confident that I am developing the skills and obtaining the required knowledge from the simulation to perform necessary tasks in a clinical setting.	4.60 ± 0.675	36.071*
My instructors used helpful resources to teach the simulation	4.40 ± 0.621	35.000*
It is my responsibility as the students to learn what I need to know from the simulation activity	4.57 ± 0.626	31.067^{NS}
I know how to get help when I do not understand the concepts covered in the simulation.	4.53 ± 0.629	44.444*
I know how to use simulation activities to learn critical aspects of these skills	4.57 ± 0.504	17.104^{NS}
It is the instructor's responsibility to tell me when I need to learn of the simulation activity content during class time.	4.30 ± 0.651	46.086*

**Significant; ^{NS}Non-Significant*

DISCUSSION

This study revealed the undergraduate female nursing students' experiences with simulation teaching in a Saudi nursing school. While revealing the results, the overall mean score of satisfaction and self-confidence in learning are observed to be high, which indicates that the nursing students of KKU are highly satisfied and gained more self-confidence in learning with simulation teaching? This finding is in line with the previous studies which have reported a high level of nursing students' satisfaction and confidence in their skills following nursing simulation [13,27,28]. Furthermore, Alammary recently observed the overall mean score of satisfaction and self-confidence in learning with nursing simulation as 3.76 and 3.70, respectively, among Saudi undergraduate nursing students [21]. Whereas, this study revealed the undergraduate nursing students' overall satisfaction mean score as 4.60 and their overall self-confidence in learning as 4.46 with simulation teaching practiced at KKU.

Concerning satisfaction, the item "I enjoyed how my instructor taught the simulation" is found with a highest mean score of 4.73. This means that the nursing students had highly preferred the simulation teaching by their instructors. This finding is in line with the results of Zapko et al [(20)]. In contrast, Alammary found that the nursing students who enjoyed the simulation teaching by their instructors with a lowest mean score of 3.64 [(21)]. On the other hand, the item "The way my instructor taught the simulation was suitable to the way I learn" is observed with a lowest mean score of 4.50, which denotes the level of satisfaction of nursing students with the instructors' teaching method. This is in accord with the finding of Roach MS [(17)].

Furthermore, Alammary found that the item under self-confidence dimension, "I am confident that I am developing the skills and obtaining the required knowledge from the simulation to perform necessary tasks in a clinical setting" is observed with a highest mean score, which is in line with the finding of this study in which the respective item had a highest mean score (4.60) [(21)]. Hence, it is inferred that the majority of nursing students have gained more self-confidence in learning with developing their knowledge and skills through simulation teaching to do their tasks in real clinical conditions. In contrast, nursing students' responses on the item "It is the instructor responsibility to tell me when I need to learn of the simulation activity content during class time" is observed with a lowest mean score (4.30). It represents that the instructors have to guide those nursing students with the appropriate time when they need to learn through simulation. This finding is in contrast to the results of previous studies [(17,18,21)].

Besides, this study revealed that all items under satisfaction dimension are significantly associated with the overall nursing students' satisfaction towards simulation teaching. Therefore, the instructors need to focus on all these items to improve the overall nursing students' satisfaction. On the other hand, only the items of self-confidence dimension such as "I know how to use simulation activities to learn critical aspects of these skills", and "It is my responsibility as the students to learn what I need to know from the simulation activity" failed to show a significant association with overall nursing students' self-confidence in learning with simulation teaching. The instructors should consider the remaining significant items to improve overall self-confidence in learning of nursing students. However, there is a need to conduct further research to investigate why those two items failed to associate with overall self-confidence in learning of nursing students. The instructors should also develop their simulation teaching methods to obtain the maximum agreement of responses in those items.

Lastly, previous studies stated that there is a significant positive relationship between satisfaction and self-confidence in learning among nursing students [(15,21,27)]. This finding is in line with the present study in which nursing students' satisfaction of KKU is positively related to their self-confidence in learning through simulation teaching.

CONCLUSION

Simulation offers an opportunity to the nursing students to attain the required clinical knowledge and skills as well as apply them in a safe and controlled setting. Such simulation teaching might improve the nursing students' satisfaction and their self-confidence in learning, thereby ensuring the quality in care and patient safety in an actual clinical setting. This study provides the perceptions of learners about the satisfaction and self-confidence in learning with simulation use. In this study, a high level of satisfaction and self-confidence in learning with simulation teaching is observed among nursing students at KKU. This study also found that Saudi nursing students have enjoyed the simulation teaching and are confident in developing the required knowledge and skills from the nursing simulation.

Further, it revealed the significant items which are associated with the overall satisfaction and self-confidence in learning among nursing students. Since the satisfaction and self-confidence in learning are correlated, it is observed that those who are satisfied with simulation teaching have gained more self-confidence in learning through simulation. Moreover, this study offers valuable information to the policymakers of nursing colleges in Saudi Arabia to fully incorporate the increased use of simulation teaching in their nursing curriculum. This would aid them to prepare a highly qualified workforce in clinical nursing care. These policymakers should expertise their instructors in simulation teaching method and encourage them to use the simulation teaching increasingly in nursing education. In turn, this would improve nursing students' knowledge, skills, clinical judgment, and critical thinking, which influence the quality of patient care.

Limitations and Recommendations

This is limited to a small sample of a single public university in Saudi Arabia. Only specific outcomes, such as satisfaction and self-confidence in learning, have been studied. In future studies, other variables such as critical thinking, clinical judgment, knowledge, self-efficacy, and simulation experience are included, and the efficacy of simulation teaching on these outcomes can be addressed. This study only revealed the relationship between satisfaction and self-confidence in learning. Moreover, the relationship of demographic variables with satisfaction and self-confidence can be revealed in further research.

Disclosure

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