



# The Open Nursing Journal

Content list available at: <https://opennursingjournal.com>



## RESEARCH ARTICLE

### Lebanese and Saudi Nursing Students' Self-Confidence, Satisfaction, and Clinical Judgment in a High-Fidelity Simulation

Yasir S. Alsalamah<sup>1</sup>, Turki S. Alsalamah<sup>2</sup>, Bander S. Albagawi<sup>3</sup>, Ahmad El Tassi<sup>4</sup>, Sarah Alkharj<sup>5</sup>, Basma Aldrees<sup>6</sup>, Rizal Angelo<sup>7</sup>, Fahed Alsalamah<sup>8</sup> and Mirna Fawaz<sup>9,\*</sup>

<sup>1</sup>Emergency Department, Al-Amal Psychiatric Hospital, Qassim, Buraydah, Saudi Arabia

<sup>2</sup>Department of Nursing, Clinical Simulation, King Fahed Specialist Hospital, Ministry of Health, Qassim, Buraydah, Saudi Arabia

<sup>3</sup>Medical Surgical Nursing Department, College of Nursing, University of Hail, Hail City, Saudi Arabia

<sup>4</sup>Faculty of Health Sciences, Beirut Arab University, Beirut, Lebanon

<sup>5</sup>Department of Nursing, Ministry of National Guard-Health Affairs, Riyadh, Saudi Arabia

<sup>6</sup>College of Nursing, King Saud Bin Abdulaziz for Health and Sciences, Riyadh, Saudi Arabia

<sup>7</sup>Department of Mental Health Nursing, College of Nursing, University of Hail, Hail City, Saudi Arabi

<sup>8</sup>Department of Nursing, Qassim University, Riyadh, Saudi Arabia

<sup>9</sup>Department of Nursing, Faculty of Health Sciences, Beirut Arab University, Beirut, Lebanon

#### Abstract:

##### Objective:

This study aims at evaluating Lebanese and Saudi nursing students' self-confidence, satisfaction, and clinical judgment in a high-fidelity simulation.

##### Background:

High fidelity simulation is an increasingly popular academic application gaining more corroboration in nursing curricula over the years. To prepare highly qualified nurses with refined clinical judgement skills, high fidelity simulation presents a promising academic technique.

##### Methods:

A quantitative cross-sectional research methodology was used to recruit 673 Lebanese and Saudi nursing students from various academic levels for this investigation. Three questionnaires were used: a sociodemographic survey, the student satisfaction and self-confidence in learning questionnaire (13 items) and the Lasater clinical judgment rubric (11 items in 4 components). A convenience sample of 673 nursing students from all academic levels, genders and ages at two universities, one in Lebanon and one in Saudi Arabia, which both offer a similar 4 year nursing curriculum and include high fidelity simulation into their courses, was recruited. The sample was calculated based on a population of 891 nursing students, thus yielding a need for 269 students for a confidence interval of 95%, which makes the 673 students in the sample sufficient.

##### Results:

Students who participated in simulation-based learning reported fairly high levels of learning satisfaction ( $p=0.00$ ), self-confidence ( $p=0.00$ ), and clinical judgment ( $p=0.03$ ), with Lebanese students scoring better overall. In the case of satisfaction ( $p=0.00$ ) and self-confidence ( $p=0.00$ ) as predictors of clinical judgment, there was a strong connection between the variables.

##### Conclusion:

Nursing students from Lebanon and Saudi Arabia who participated in simulation-based learning activities showed high levels of satisfaction, self-confidence, and clinical judgment.

**Keywords:** Simulation, Nursing Education, Self-confidence, Clinical Judgement, Students, Satisfaction.

#### Article History

Received: June 29, 2022

Revised: September 28, 2022

Accepted: October 7, 2022

## 1. INTRODUCTION

Since the early twenty-first century, the function of nurses has changed dramatically. Nurses today do more than just offer

care; they promote a holistic perspective to nursing practice with expanded duties to suit the requirements of today's complicated clinical setting. Nurses are required to respond quickly and correctly to more complicated cases, as well as keep up with the fast advancement in clinical technology. To

\* Address correspondence to this author at the Department of Nursing, Faculty of Health Sciences, Beirut Arab University, Beirut, Tareek Al Jadida, Afeef Al Tiba, 1105, Lebanon; Tel: 00961-03-875199; E-mail: [mirna.fawaz@bau.edu.lb](mailto:mirna.fawaz@bau.edu.lb)

address this transition, newly graduating nurses are required to be autonomous and capable of rendering high caliber practice, with a high degree of clinical reasoning judgment abilities [1].

Nurse educators are encouraged to empower students to enhance higher-order thinking abilities through clinical practicums under observation, which are largely utilized to achieve this goal. Nursing students may exercise not only clinical skills but also problem-solving and decision-making abilities through giving nursing care to patients in clinical training. Nevertheless, due to a scarcity of nurses, faculty members are having difficulty obtaining appropriate practicums for their trainees [2]. Simultaneously, increased nursing student enrollment in reaction to a labor shortage led to competitiveness among nursing professors for clinical placement of students [3]. Nurse training is thus restricted in terms of clinical posting to specialist areas and hands-on experience providing nursing care to actual patients. Furthermore, ethical concerns about practicing on real patients restrict nursing students' ability to gain hands-on training in critical circumstances. Several new instructional techniques have been employed in previous years to prepare proficient registered nurses. Nursing students are increasingly using interactive learning techniques such as high-fidelity simulation to prepare for the increasingly complicated clinical setting.

For instance, simulation has been utilized in nursing education for many years. Static manikins, a type of low-fidelity simulator, were originally used to develop basic care abilities. Nursing students learned the theory in lectures and then applied their nursing skills. Since the early twenty-first century, high-fidelity simulators have arisen as a result of technological advancements and have been used in nursing education. With computerized management, a high-fidelity simulator provides more lifelike biology and human-like reactions to a variety of illnesses and nursing treatments. High-fidelity simulation has been shown to offer a secure and realistic clinical, educational experience for nursing students to exercise procedural knowledge and essential components of nursing practice, including critical thinking, decision making, and prioritizing without endangering actual patients [4].

Considering the significance of developing reasoning skills and practicing clinical judgement among nursing students in order to satisfy the challenging health context, there are a growing number of studies looking into the usage of high-fidelity simulation in the advancement of self-confidence as well as clinical judgement and satisfaction [5]. High-fidelity simulation has been shown to increase nursing students' confidence and competence in a non- threat educational setting [6]. As per Im *et al.* (2018), one of the key variables that may impact nursing students' clinical judgement and problem-solving ability, as well as decision making and critical thinking, is confidence [7]. Several research works in the West found that high-fidelity simulations increased student nurses' satisfaction and self-confidence [8]. According to further research, high-fidelity simulation can help students improve critical thinking as well as clinical judgement and problem-solving skills [9]. Even though much research in the West has shown the advantages of utilizing high-fidelity simulation in nursing training, there are few studies evaluating the efficiency

of HFS among Lebanese and Saudi students. Because of the differences in learning styles comparing Arab and Western nursing students, results from western research may not be applicable in the Arab setting. Therefore, there is a necessity to confirm the efficacy of HFS as a comparatively recent teaching method utilized in Lebanese and Saudi nursing education, and with scarce research demonstrating its impact on learning outcomes among nursing students in these two countries. Thus, this paper aims to evaluate the self-confidence, satisfaction, and clinical judgement of Lebanese and Saudi nursing students participating in high fidelity simulation.

## 2. MATERIALS AND METHODS

### 2.1. Research Design

In this study, the researchers employed a quantitative cross-sectional design to assess nursing students' self-confidence, satisfaction, and clinical judgment.

### 2.2. Sample and Setting

The study included 673 Lebanese and Saudi student nurses from various academic levels at either of the two universities in Saudi Arabia and Lebanon that offered baccalaureate nursing programs. Both institutions had a four-year nursing curriculum, included simulation-based learning in their courses, and established simulation facilities with simulated patient rooms and a conference area. Participants at both institutions had a similar proportion of instructional vs. clinical and simulation hour ratios, with about 94 credit hours of didactic teaching, 34 simulation-based credit hours, and around 1254 physical hours of formal placement. One distinction between the two institutions is that the one in Beirut did not have its own medical facility and instead put students at an allied university hospital for specialized practice, whereas the one in Saudi Arabia did. The two institutions were located in culturally equivalent nations, supporting the particular comparisons between the participants. Students with a previous technical degree in nursing, work experience, or who had formerly worked as a nurse aid were not eligible to partake in the research. Student nurses from different academic years who have participated in simulation-based learning during their academic degree and are actively completing clinical practice at an associated university hospital were included.

### 2.3. High Fidelity Simulation in the Nursing Program

Both institutions incorporated high fidelity simulation experiences in their respective nursing programs since the first academic semester. The nursing students participate in HFS experiences since day one in the fundamentals of nursing courses, where they get to interact with low, middle fidelity and high fidelity simulators to learn skills such as comprehensive patient care, injections, medication administration, intra-venous therapy, positioning and transporting a patient, nasogastric feeding and other basic nursing skills. The nursing students are then exposed to more advanced skills in the simulated setting through critical care nursing courses, such as learning how to operate closed and open suctioning systems, operating syringe pumps, central venous catheters, measuring central venous and arterial

pressure, operating patient monitors and carrying out electrocardiography. Moreover, as the student nurses advance in their program, they learn specialized skills across the life span and across various organ systems in the simulated setting, where they learn how to care for ostomies, orthopedic patients, delivering women, pediatric patients, and psychiatric and geriatric patients. These students also learn to carry out all forms of physical assessment and patient interviewing in the simulated setting before attending the clinical setting. All these skills are introduced through well design scenarios where the students get to engage in pre-briefing, simulation, and debriefing, where each scenario is allocated a well-studied time frame.

#### 2.4. Recruitment and Data Collection

Students were contacted by email, which was acquired from each university's student online mail registry. The email included detailed information about the study's scope and objectives. The students were advised that their involvement was completely anonymous and voluntary, and they were requested to respond to the email with written approval. After agreeing to partake, students got another email with an online questionnaire built on Google Forms, which they were required to complete. The survey was given to 790 students, and 673 of them answered, yielding a participation rate of 87.71 percent. The students who did not partake stated that they were unable to participate due to their busy academic commitments or personal obligations. The data was gathered over two months (June 2021-August 2021).

#### 2.5. Instrumentation

##### 2.5.1. Sociodemographic Questionnaire

The gender, age, academic level and nationality of the students were all collected using a demographic data sheet.

##### 2.5.2. Student Satisfaction and Self-confidence in Learning (SCL)

This 13-item, 5-point Likert-scale questionnaire was created by the National League for Nursing. The tool is divided into two subdimensions: one for assessing student satisfaction (five questions) and another for assessing self-confidence (eight questions) in simulation training. On each statement, students were instructed to select the numbers that best described their mentality or belief to reflect their own feelings. The grading method for reporting students' perceptions of satisfaction and self-confidence ranges from 1 to 5, with 1 equating to "strongly disagree" and 5 equating to "strongly agree." The overall score of the survey is the sum of the replies to each question. The minimum and maximum scores on the satisfaction sub-scale are 5 and 25, respectively, while the minimum and maximum scores on the self-confidence sub-scale are 8 and 40. That is, students who receive a good score in the present high fidelity simulation learning experience report more satisfaction and self-confidence. The content validity of this questionnaire was determined by 9 clinical specialists, as per Jeffries and Rizzolo [10]. Cronbach's alpha scores for the subscales of self-confidence and satisfaction are 0.87 and 0.94, correspondingly. Cronbach's alpha of the satisfaction and self-confidence sub-scales were 0.85 and 0.86,

as per the analysis conducted in this research paper.

##### 2.5.3. Lasater Clinical Judgment Rubric (LCJR)

The clinical judgment of students was assessed using the LCJR. The assessment has four components (noticing, interpreting, responding, and reflecting) and eleven parts on which a topic is assessed as beginning (1 point), developing (2 points), accomplished (3 points), or exceptional (4 points). The total rating may be anything between 11 and 44. Superior clinical judgment is associated with higher scores [11]. In summary, the noticing dimension focuses on the capacity to acquire and identify data. Valuing important data and analyzing it to describe a patient's status is part of the interpreting dimension. Behaviors, effective communication, involvement, and the application of nursing skills are all addressed in the responding component. Self-evaluation and a dedication to improvement are part of the reflecting component. The Cronbach alpha of this questionnaire was recorded to be 0.81 in this study.

#### 2.6. Data Analysis

The statistical data analysis was conducted with the help of the Statistical Package for Social Science (SPSS) application, which was used to enter all of the data into a register. Each survey's total scores and attributes were calculated. Since it was statistically significant, a 0.05 p-value was used. The data were presented using descriptive statistics such as frequencies, percentages, means, and standard deviations. Independent t-tests and ANOVA were used to investigate differences across study group subcategories, and bivariate correlational analysis was used to see if there was a relationship between the research factors. Regression analysis was used to determine predictors of variables.

#### 2.7. Ethical Considerations

The university's Research and Ethics Committee granted permission to these study investigators (ECO-R-75). All ethical considerations were handled in accordance with the concepts and standards of the international Declaration of Helsinki, with students being informed of all research information prior to recruitment and not being compelled to participate. Students who did not take part had no negative consequences, and informed permission was acquired.

### 3. RESULTS

#### 3.1. Participants' Characteristics

The sample of this research comprised 673 nursing students, where 248 (36.8%) were males while 425 (63.2%) were females. In addition, the sample was almost equitably distributed between Lebanese and Saudi students, where 315 (46.8%) of them were Lebanese while 358 (53.2%) were Saudi, with a recorded mean age of 20.43±1.65. The students were distributed among academic years as follows; 165 (24.5%) were first year students, 160 (23.8%) were second year students, 198 (29.4%) were third year students, 88 (13.1%) were in their fourth-year, and 62 (9.2%) were completing their internship (Table 1).

Table 1. Demographic data.

Category	N	%
<b>Gender</b>		
Male	248	36.8
Female	425	63.2
<b>Nationality</b>		
Lebanese	315	46.8
Saudi	358	53.2
<b>Academic Year</b>		
First Year	165	24.5
Second Year	160	23.8
Third Year	198	29.4
Fourth Year	88	13.1
Internship	62	9.2
<b>Age (M±SD)</b>	20.43±1.65	

### 3.2. Satisfaction, Self-confidence and Clinical Judgment Scores

A total score was computed for each student's satisfaction, self-confidence and clinical judgement by adding the relevant items. The descriptive analysis showed that Lebanese students scored higher on the level of satisfaction ( $32.04 \pm 7.30$ ) in comparison with Saudi students ( $30.75 \pm 6.27$ ), where the independent t-test showed a p-value of  $p=0.00$  was recorded. The case was similar on the level of self-confidence, where the Lebanese students scored a mean of  $29.69 \pm 7.45$  in comparison with Saudi students, who scored a mean of  $28.08 \pm 6.43$  ( $p=0.00$ ). In addition, the analysis showed that Lebanese students scored higher than Saudi students on the level of the total clinical judgement score, with men scores of  $18.48 \pm 5.14$  and  $17.44 \pm 4.28$ , respectively ( $p=0.03$ ) (Table 2).

Further inferential statistics were carried out and have shown that there were no differences in scores of satisfaction,

self-confidence and clinical judgement according to gender, yet a highly significant difference was recorded on the level of satisfaction according to the academic year ( $p=0.00$ ) where third year students scored highest ( $29.36 \pm 7.07$ ). A significant difference was also recorded on the level of self-confidence according to the academic year ( $p=0.01$ ), where first year students scored highest ( $29.55 \pm 7.22$ ) and as well as on the level of clinical judgement ( $p=0.00$ ), where internship students scored highest ( $34.87 \pm 6.01$ ) (Table 3).

### 3.3. Correlational Analysis

A bivariate correlational analysis was carried out to determine the relationship between student satisfaction, self-confidence and clinical judgement. The results showed a highly significant positive correlation between satisfaction, confidence and clinical judgement ( $p=0.00$ ). A significant correlation was also noted between the study variables and age ( $p=0.00$ ) (Table 4).

Table 2. Student satisfaction, confidence and clinical judgement scores.

-	Total Sample		Lebanese		Saudi		P-value
	Mean	SD	Mean	SD	Mean	SD	
<b>Satisfaction</b>	31.35	6.79	32.04	7.30	30.75	6.27	<b>0.00</b>
<b>Self-confidence</b>	28.83	6.96	29.69	7.45	28.08	6.43	<b>0.00</b>
<b>Clinical Judgement</b>	17.93	4.73	18.48	5.14	17.44	4.28	<b>0.03</b>

Table 3. Differences in scores according to gender and academic year.

-	-	Satisfaction		Self-confidence		Clinical Judgement	
		Mean	SD	Mean	SD	Mean	SD
<b>Gender</b>	Male	17.56	4.71	28.05	7.14	31.05	7.05
	Female	18.14	4.73	29.28	6.82	31.53	6.64
<b>P-value</b>		0.60		0.59		0.49	
		Mean	SD	Mean	SD	Mean	SD

(Table 3) contd....

-	-	Satisfaction		Self-confidence		Clinical Judgement	
Academic Year	First	18.42	5.20	29.55	7.22	31.27	6.40
	Second	16.72	4.82	27.14	6.72	29.64	7.20
	Third	29.36	7.07	29.36	7.07	31.10	6.83
	Fourth	18.15	4.10	28.98	6.28	32.70	6.13
	Internship	18.74	3.67	29.37	6.97	34.87	6.01
P-value		0.00		0.01		0.00	

Table 4. Bivariate correlation of study variables.

-	-	Age	Satisfaction	Confidence	Clinical Judgement
Satisfaction	R-value	0.16	1.00	0.85	0.60
	P-value	0.00	-	0.00	0.00
Confidence	R-value	0.14	0.85	1.00	0.62
	P-value	0.00	0.00	-	0.00
Clinical Judgement	R-value	0.19	0.60	0.62	1.00
	P-value	0.00	0.00	0.00	-

Table 5. Regression of clinical judgement .

-	B	Std. Error	Beta	T	P-value
Satisfaction	0.40	0.08	0.28	4.94	0.00
Confidence	0.37	0.06	0.38	6.82	0.00

3.4. Predictors of Clinical Judgement

A regression analysis was carried out, where higher student satisfaction and self-confidence were found to be predictors of higher clinical judgement (p=0.00) (Table 5).

4. DISCUSSION

Nurse student satisfaction with their learning and self-confidence may be used to create and implement educational programs for nurses that will help them enhance their education and patient care. The goal of this study was to find out how nursing students felt about simulation and how simulation could have impacted their clinical judgment formation. Despite the fact that simulation is used in nursing curriculum as a learning activity or as an alternative to clinical experience, few researchers have looked at bachelor's degree nursing students' conceptions of simulation and its impact on student satisfaction, confidence, and clinical judgment, particularly in Saudi Arabia and Lebanon.

The favorable impact of repeated simulation experiences on student learning, satisfaction, and self-confidence is supported by this investigation. Both the student satisfaction and self-confidence in Learning questionnaires showed that students enjoyed the exercise. The students that took part in the simulation unanimously agreed that it was a beneficial learning experience. These findings corroborate Power's findings, which indicated that students thought the simulation was useful, productive, and inspiring; it aided learning and helped students develop confidence. Furthermore, numerous research investigations have shown that simulations with high-fidelity manikins improve student satisfaction. For instance, Herron et al. carried out a similar study and examined the impact of using high fidelity simulations on the development of self-confidence

and students' satisfaction with learning and have shown that students who took part displayed high scores [12]. In addition, Omer has conducted a similar study to ours, where they evaluated the perceptions of students participating in high fidelity simulation in regards to their satisfaction and self-confidence and found the simulation group had higher levels of satisfaction and self-confidence compared to their counterparts, thus establishing the results of our study [13].

The results of this study have shown that the participating students have displayed high clinical judgment scores upon their engagement with high-fidelity simulation experiences. This is consistent with a recent study by Hallin et al., which involved students who took part in simulation sessions and found that participating in the simulation was highly correlated with increased clinical judgement among student nurses [14]. Our findings were also in line with Lesa et al., who carried out a study to explore the perceptions of students participating in simulation and found that simulation has proven to enhance the critical thinking and clinical judgement of student nurses [15].

Moreover, the results of our study found that there was a highly significant difference in the level of self-confidence, satisfaction and clinical judgement between the different academic years, where the third year students were most satisfied, first year students were most confident, and internship students had the highest scores. In clinical judgment this is consistent with Zapko et al., where results of that study showed that higher academic levels had higher scores on the level of satisfaction and importance of active learning [6].

Finally, the results of this study have established that satisfaction and self-confidence are highly correlated with clinical judgement and are significant predictors of it. This is

supported by the findings of Sarman & Pardi who conducted a study on using clinical simulation models among nursing students and documented a significant correlation between satisfaction and clinical judgement [16]. Similarly, Kaliyaperumal *et al.* reported that self-confidence and satisfaction are correlated with clinical judgement among nursing students [17]. Albagawi *et al.* comparably found that self-confidence is a predictor for clinical judgement in the application of simulation among nursing students [18, 19].

## 5. LIMITATIONS

This study was done on a small group of Lebanese and Saudi nursing students, which may have hindered the development of more notable findings and reduced the generalizability of the results.

## CONCLUSION

Simulation has been a common and vital technique in nursing clinical training, and its popularity is growing. Evaluating the benefits of this application has become popular research, and much information regarding student self-confidence and satisfaction with simulation experiences has been shared, but not much in the Arab world especially tackling clinical judgement. This study adds to the growing body of knowledge in simulation by revealing that students who participate in high-fidelity simulation have relatively high levels of satisfaction, self-confidence, and clinical judgment, with higher clinical judgment predicted by increased self-confidence and satisfaction.

## RECOMMENDATIONS

The authors of this study propose that this investigation be replicated with a bigger sample of nursing students from various nursing schools in Lebanon and Saudi Arabia in order to discover and explore more fundamental tendencies and generalize the findings for future inquiry. The study investigators also recommend incorporating standardized patient simulation into nursing students' satisfaction with learning, self-confidence, and clinical judgment to assess its effectiveness in producing high-quality nurses and, as a result, analyze its wider adoption in nationwide nursing curricula.

## AUTHORS' CONTRIBUTIONS

The manuscript has been conceptualized and designed by MF and YA. YA wrote the proposal and then MF and YA reviewed it and worked on validation. TA, BA, AT, SA, BA, RA, and FA worked on data curation and analysis. MF and YA worked on writing and finalizing the manuscript. All authors reviewed and edited the manuscript. YA and MF reviewed the final draft and YA submitted it to the journal.

## ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The university's Research and Ethics Committee granted permission to these study investigators (ECO-R-75).

## HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All procedures

performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committees and with the 1975 Declaration of Helsinki, as revised in 2013.

## CONSENT FOR PUBLICATION

Informed consent was obtained from all participants.

## AVAILABILITY OF DATA AND MATERIALS

The data and supportive information are available within the article.

## FUNDING

None.

## CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

## ACKNOWLEDGEMENTS

Declared none.

## REFERENCES

- [1] Schuelke S, Barnason S. Interventions used by nurse preceptors to develop critical thinking of new graduate nurses: A systematic review. *J Nurses Prof Dev* 2017; 33(1): E1-7.
- [2] Ludin SM. Does good critical thinking equal effective decision-making among critical care nurses? A cross-sectional survey. *Intensive Crit Care Nurs* 2018; 44: 1-0.
- [3] Roberts E, Kaak V, Rolley J. Simulation to replace clinical hours in nursing: A meta-narrative review. *Clin Simul Nurs* 2019; 37: 5-13.
- [4] Hanshaw SL, Dickerson SS. High fidelity simulation evaluation studies in nursing education: A review of the literature. *Nurse Educ Pract* 2020; 46102818
- [5] Kido K, Uemura Y, Matsumura K. The proposal of an instructional design model for maternity nursing in japan-simulation-based education for improving clinical judgement. *Int J Nurs Educ* 2021; 13(4): 21.
- [6] Zapko KA, Ferranto ML, Blasiman R, Shelestak D. Evaluating best educational practices, student satisfaction, and self-confidence in simulation: A descriptive study. *Nurse Educ Today* 2018; 60: 28-34.
- [7] Im KJ, Yang BS, Kim YL. Development and effects of simulation educational program for nursing students. *J Digital Converg* 2018; 16(2): 203-13.
- [8] Cummings CL, Connelly LK. Can nursing students' confidence levels increase with repeated simulation activities? *Nurse Educ Today* 2016; 36: 419-21.
- [9] Spies C, Botma Y. Optimising simulation learning experiences for mature, postgraduate nursing students. *Nurse Educ Pract* 2020; 47102834
- [10] Jeffries PR, Rizzolo MA. Designing and implementing models for the innovative use of simulation to teach nursing care of ill adults and children: A national, multi-site, multi-method study. New York, NY: National League for Nursing 2006.
- [11] Miraglia R, Asselin ME. The Lasater Clinical Judgment Rubric as a framework to enhance clinical judgment in novice and experienced nurses. *J Nurses Prof Dev* 2015; 31(5): 284-91.
- [12] Herron EK, Powers K, Mullen L, Burkhart B. Effect of case study versus video simulation on nursing students' satisfaction, self-confidence, and knowledge: A quasi-experimental study. *Nurse Educ Today* 2019; 79: 129-34.
- [13] Omer T. Nursing students' perceptions of satisfaction and self-confidence with clinical simulation experience. *J Educ Pract* 2016; 7(5): 131-8.
- [14] Hallin K, Häggström M, Bäckström B, Kristiansen LP. Correlations between clinical judgement and learning style preferences of nursing students in the simulation room. *Glob J Health Sci* 2016; 8(6): 1.
- [15] Lesä R, Daniel B, Harland T. Learning With Simulation: The

- Experience of Nursing Students. *Clin Simul Nurs* 2021; 56: 57-65.
- [16] Sarman S, Pardi KW. Satisfaction and confidence in using clinical simulation models among undergraduate nursing students in a public university in malaysia: A cross-sectional study. *Int J Nurs Educ* 2019; 11(4)
- [17] Kaliyaperumal R, Raman V, Kannan LS, Ali MD. Satisfaction and self-confidence of nursing students with simulation teaching. *Int J Health Sci Res* 2021; 11(2): 44-50.
- [18] Albagawi S, Grande RA, Berdida DJ, Raguindin SM. Correlations and predictors of nursing simulation among Saudi students 2021.
- [19] Powers K. Bringing simulation to the classroom using an unfolding video patient scenario: A quasi-experimental study to examine student satisfaction, self-confidence, and perceptions of simulation design. *Nurse Educ Today* 2020; 86104324

---

© 2022 Alsalamah *et al.*

This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 International Public License (CC-BY 4.0), a copy of which is available at: <https://creativecommons.org/licenses/by/4.0/legalcode>. This license permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.