

Nursing Students' Attitudes Toward Simulation-Based Learning in India: A Cross-Sectional Study

Prathima P¹, Renuga E², Ramesh S³, Fathima Kani.M⁴, Dhurga devi S P⁵, Syed ali⁶

¹ Dean, School of Nursing, DRIEMS University, Odisha, India.

Email: prathima_1978@ymail.com

² Nursing Lecturer, Faculty of Nursing, Medical City for Military and Security Services School

³ Associate Professor, College of Nursing Sciences, Dayananda Sagar University, Bengaluru, Karnataka, India.

⁴ Professor, SCAD College of Nursing, Ponnakudi, Tirunelveli, Tamil Nadu

⁵ Nursing Lecturer, Faculty of Nursing, Medical City for Military and Security Services School

⁶ Professor & Head of Department, MNR College of Nursing, Sangareddy, Telangana, India.

ABSTRACT

In nursing, Simulation-based learning has become an indispensable instructional approach in nursing education, as it provides a safe health care environment for developing clinical competence, technical/non-technical skills, communication, teamwork, and patient-safety skills. Understanding undergraduate nursing students' attitudes toward Simulation-Based Learning is highly significant for effective curriculum integration and sustainability. The present study aims to evaluate undergraduate nursing students' diverse attitudes toward simulation-based learning in India and to determine the association between these attitudes and selected demographic variables. For this study, the quantitative descriptive cross-sectional study design was used and conducted among 237 undergraduate nursing students selected using convenience sampling. Data were collected using the standardized KidSim Attitude Assessment Tool. In the current study, the questions under investigation used descriptive and inferential statistics, such as chi-square, to analyze the obtained data. Findings revealed that a significant percentage of respondents (86.5%) adopted a favourable attitude towards learning by simulation. There were no statistically significant correlations between the attitudes and demographic factors like sex, study year or prior exposure to simulation ($p > 0.05$). There was a statistically significant association between attitude and workshop/conference Attendance. The paper concludes that the simulation-based learning experiences a positive attitude among the nursing students, thus approving the continuation and the extension of the simulation learning in nursing educational programs

Keywords: Simulation-based learning; Nursing students; Attitude; Nursing education

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INTRODUCTION

Healthcare systems worldwide are undergoing rapid transformation due to increasing patient complexity technological advancement, and heightened expectations for patient safety and quality care. Nurses, play a vital role in ensuring effective, safe and patient-centred care delivery. Consequently nursing education must prepare students with theoretical knowledge and with strong clinical skills critical thinking abilities, effective communication and teamwork competencies^{1,2}

Traditional nursing education relies heavily on classroom instruction and clinical placements. However, clinical learning environments frequently present challenges such as limited patient exposure, overcrowded clinical settings, high student-to-faculty ratios, time constraints, and concerns related to patient safety. These challenges may restrict opportunities for hands-on practice and contribute to the theory–practice gap commonly reported in nursing education^{3,4}.

Simulation-based learning has emerged as an

innovative educational approach to address these challenges. Simulation provides a safe, controlled and realistic learning environment where nursing students can practice clinical procedures, decision-making, communication, and teamwork without placing real patients at risk⁵. Simulation modalities range from low-fidelity task trainers to high-fidelity manikins and virtual simulations, allowing educators to tailor learning experiences to students educational needs⁶.

Evidence from international studies indicates that simulation-based learning enhances clinical competence, confidence, communication skills teamwork, and readiness for professional practice among nursing students^{7,8,9}. Simulation has also been shown to support inter-professional education by promoting collaboration, role clarification, and mutual respect among healthcare students, which are essential components of safe and effective patient care¹⁰.

Despite its documented benefits, the effectiveness of simulation-based learning is influenced not only by instructional design and faculty expertise but also by students' perceptions and attitudes toward simulation¹¹. Positive attitudes are associated with greater engagement, motivation, satisfaction, and improved learning outcomes, whereas negative perceptions may hinder participation and reduce educational impact¹².

In India, nursing education institutions are gradually incorporating simulation-based teaching methodologies to align with global educational standards. However, the level of simulation integration varies widely due to differences in infrastructure, faculty training, and resource availability. Moreover, empirical evidence examining Indian nursing students' attitudes toward simulation-based learning remains limited, particularly regarding the influence of demographic variables^{13,14,15,16}.

Therefore, this study aimed to assess attitudes toward simulation-based learning in India and to examine the association between attitudes and selected demographic variables among nursing students.

OBJECTIVES

1. To assess nursing students attitudes toward simulation-based learning
2. To determine the association between attitudes toward simulation-based learning and selected demographic variables.

METHODOLOGY

The Study Design adopted was a quantitative descriptive cross-sectional research design. Cross-sectional designs are appropriate for assessing attitudes and associations at a single point in time and are widely used in nursing education research. The study population comprised undergraduate nursing students enrolled in selected nursing colleges. These students were actively engaged in nursing education and had exposure to simulation-based learning activities as part of their academic curriculum. The sample consists of a total of 237 undergraduate nursing students, selected using a convenience sampling technique, ensuring a balanced distribution across 3rd and 4th years. This approach facilitated a comprehensive comparison of perceptions across the 3rd and 4th year students because these students might have had prior exposure to simulation-based workshops, training and might have attended a conference than previous year students. A convenience sampling technique was Employed and the convenience sampling is commonly used in educational research due to feasibility and accessibility, particularly within academic institutions. Participants' eligibility criteria are third and fourth year B.Sc nursing students, those who are willing to participate and Indian Nursing Council-recognized institutions.

TOOLS AND TECHNIQUES

Data was collected using a socio-demographic tool, which includes 7 items such as Gender, Years, name of the college, name of the state, number of lab hours attended per week, Previous exposure to lab/simulation and previous attendance in simulation workshop/conference. The attitude towards simulation-based learning data was collected using the KidSim Attitude Assessment Tool, a standardized questionnaire designed to assess nursing students' attitudes toward simulation-based learning. The tool evaluates multiple domains, including Clinical learning, Teamwork, Communication and Educational effectiveness. Responses are rated on a 5-point Likert scale ranging from *strongly disagree*(1) to *strongly agree*(5), with higher scores indicating more positive attitudes. Content validity of the KidSim Attitude Assessment Tool was established through expert review to ensure relevance, clarity, and alignment with simulation-based learning objectives. Construct validity has been supported through factor analysis in previous studies. Reliability testing was done with Cronbach's alpha values exceeding the recommended threshold of 0.70. In the present study, the tool demonstrated acceptable internal consistency.

ETHICAL CONSIDERATION

For this study, approval from the nursing college principals, the ethical committee and consent from all the participants were obtained before the study. The quantitative data were collected through an online survey link that was distributed to the respective college principals. The principals facilitated the distribution of the survey link to third- and fourth-year nursing students within their institutions.

the questionnaire at their convenience, thereby improving feedback rates. Privacy was upheld by not gathering any personally identifiable data, and confidentiality of the data was guaranteed throughout the study. Access to the collected data was restricted to the research team only.

RESULT AND ANALYSIS

The data were analyzed by using appropriate software and techniques. The results were presented below.

DATA COLLECTION

The online survey method enabled students to fill out

Table 1. Frequency and distribution of background variables of Nursing students (N = 237)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Boys	40	16.9
	Girls	197	83.1
Year of study	Third year	65	27.0
	Fourth year	172	72.6
Previous exposure to simulation	Yes	178	75.1
	No	59	24.9
Workshop/conference attendance	Yes	151	63.7
	No	86	36.3

Table 1 reveals the background profiles of 237 students. Results show that girl students overwhelmingly represent the sample, comprising (83.1% n=197), while males account for only (16.9% n=40). Most respondents were in the fourth year of study (72.6, n=172), third-year students were 27.0 (n=65). The majority of participants have already

been exposed to simulation (75.1% n=178), and 24.9% (n=59) had no previous exposure to it. Similarly, most of the respondents (63.7%, n = 151) had already attended simulation-related workshops/conferences, compared to 36.3 (n = 86) who did not.

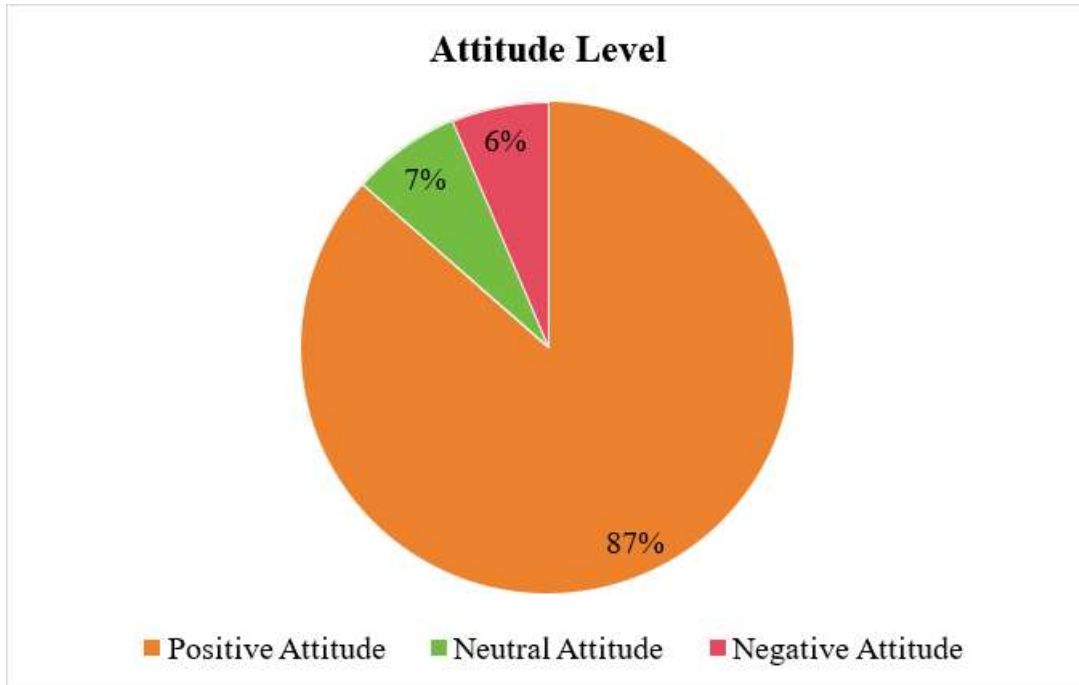


Fig 1: Distribution of the percentage level of Attitude toward Simulation-Based Learning

Table 2. Category-wise distribution on Simulation-Based Learning

Category	Negative (%)	Neutral (%)	Positive (%)
Relevance of Simulation	16 (6.7%)	15 (6.2%)	209 (87.1%)
Inter-professional Education	18 (7.5%)	15 (6.2%)	207 (86.2%)
Communication	18 (7.5%)	12 (5.0%)	210 (87.5%)
Roles & Responsibilities	17 (7.1%)	10 (4.2%)	213 (88.8%)
Situation Awareness	18 (7.5%)	13 (5.4%)	209 (87.1%)

Table 2 depicts that most of the students showed positive attitudes towards simulation-based learning.

Table 3. Association between attitude and Demographic characteristics on simulation-based learning among Nursing students (N = 237)

Variable		Negative	Neutral	Positive	χ^2	df	p-value (0.05)	Inference
Gender	Boys	5	10	25	2.54	2	0.281	NS
	Girls	20	25	152				
Year of Study	Third year	8	12	45	1.87	2	0.392	NS
	Fourth year	17	23	132				
Previous Exposure to Simulation	Yes	12	20	146	5.12	2	0.077	NS
	No	13	15	31				
Workshop/Conference Attendance	Yes	8	15	128	6.45	2	0.040	S*
	No	17	20	49				

NS- Not Significant, S*- Significant

Table 3 reveals that the attendance of workshop/conference and positive attitude towards simulation-based learning is significantly ($p = 0.040$), but there was no significant difference between the other demographic variables and attitude towards simulation-based learning.

DISCUSSION

The Majority of the findings reveal that simulation-based learning is positively perceived by nursing students, confirming its usefulness as a learning strategy. The presence of consistent positive perceptions has been reported with varying nursing curricula and cultural settings and this has been highlighted in the universal acceptance of simulation^{7,9}.

The lack of the statistically significant correlation between the student attitudes and the demographics means that simulation-based learning is not appreciated in any different way when it comes to age, gender, and academic level. The same findings have been mentioned in the previous studies, which suggests that demographic factors do not significantly affect the acceptability of simulation among learners^{5,8}.

There is strong evidence that suggests teamwork, communication, and leadership highlight the importance of simulation in the development of collaborative practice and professional competence. Evidently, the existing research has indicated that simulation education produced a significant improvement in the communication skills, teamwork behavior, and confidence in leadership among nursing students^{10,11}.

These research findings further supported that structured simulation scenarios and guided

debriefing promote inter-professional collaboration and effective team functioning in clinical settings^{3,7}. These experiences prepared nursing students for real-world clinical/technical environments requiring safe patient care.

In contrast, few studies have reported that less favorable perceptions of simulation were present when limitations such as inadequate resources, insufficient faculty training, or poor scenario design were present. These studies have noted that increased student anxiety and reduced satisfaction, underscoring the importance of quality implementation^{6,10}.

At the same time, the qualitative responses from open-ended questions in the present study revealed that students perceived simulation as helpful in bridging the gap between theory and practice, and they would like to have a practice lab. Surprisingly, similar qualitative findings have been highlighted students' appreciation of simulation for improving confidence, clinical reasoning, and preparedness for patient care^{2,3}.

Moreover, participants also emphasized the value of debriefing sessions, describing them as critical for reflection and constructive feedback. In addition to this, evidence from previous research supports that reflective debriefing enhances learning outcomes and deepens understanding of clinical performance^{3,4}.

However, a minority of students expressed concerns pertaining to time constraints and performance anxiety during simulation. The same concerns have also been reported in earlier studies, suggesting that while simulation is beneficial, emotional and logistical challenges should be addressed to optimize student experiences⁶.

Recommendations

By using study findings, SBE must be well integrated into the B.sc Nursing program to ensure strong clinical competence, teamwork, leadership and communication skills.

To train Nursing faculty members in simulation design and simulation reflective debriefing initiatives.

Additional research must be involved using mixed methods and longitudinal designs to determine whether there is a long-term effect of SBE on clinical competence²⁴.

CONCLUSION

The attitude of Bachelor's nursing students towards the attitude of simulation-based learning was overwhelmingly positive, which contributes to the further use and development of the learning method in nursing education programs in the future to contribute to clinical competence and professionalism³⁶.

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