

EFFECTIVENESS OF SIMULATION ON AIRWAY ADJUNCTS UPON COMPETENCY (KNOWLEDGE AND SKILL) AMONG NURSING STUDENTS

Nursing

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ABSTRACT

Introduction: Airway management crucial skills for nurses for saving lives of critical patients in emergency situation. The study was conducted to assess the level of competency on airway adjuncts among Nursing students. **Objectives:** To determine the effectiveness of Simulation on Airway Adjuncts by comparing the competency (knowledge and skill) on airway adjuncts among the control and experimental group of nursing students. **Methodology:** A quantitative research approach with quasi experimental research design was used. A sample of 90 nursing students were selected by total enumerative sampling technique, out of which 45 each in control group and Experimental group. Pretest knowledge and practice airway adjuncts such as oropharyngeal and nasopharyngeal airway were assessed in both groups. Simulation based learning on airway adjuncts was administered to experimental group of nursing students through Powerpoint, Demonstration of Skills using Simulation Scenarios on Mannequins, and Debriefing. Posttest of Knowledge and Observation of Skill of Nursing Students in Simulation Scenarios was assessed by a team of faculty in Batches of 5 each using 5 mannequins was done after one week using Structured knowledge Questionnaire on Airway Adjuncts, Observation Checklist for Skill of Insertion of Airway Adjuncts. **Results:** There was a significant difference in post-test mean knowledge scores on airway adjuncts between control ($M=10.86/30$, $SD=4.73$) and experiment group ($M=18.97/30$ & $SD=2.17$) of nursing students with 't' value of 10.29 at $p < 0.001$ and significant difference in post-test mean skills scores on airway adjuncts between control ($M=9.6/20$, $SD=2.85$) and experiment group ($M=14.55/20$ & $SD=2.62$) of nursing students with 't' value of 14.26 at $p < 0.001$. There was a significant correlation between Overall Knowledge and skill on Airway of Nursing Students. **Conclusion:** Educating the nursing students by implementing a regular simulation-based team training program, can ultimately enhance the confidence levels in airway management in Real life Clinical Settings

KEYWORDS

Airway adjuncts, Nursing students, Simulation

INTRODUCTION

Airway management and ventilation are principal and crucial skills for nurses for saving lives of critical patients in emergency situation. Therefore, preparedness of emergency nursing skills for undergraduate nursing students is required to improve knowledge, self-efficacy, and clinical performance in airway management and ventilation in order to be proficient nurses after graduation.

Simulation is a technique that can be used "to replace or amplify real experiences with guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner". This method will boost the skills, knowledge, and ultimately confidence levels in treating the patients amongst the nursing students. Students are exposed to a realistic situation that could be community or hospital based and will need to combine their assessment and clinical decision-making skills with communication, teamwork and management to care for the simulated patient. Students become active learners that allow them to construct new knowledge upon their prior knowledge during the learning process.

Simulation is an ideal educational and practice platform for the adult learner because it provides an opportunity to build an existing knowledge base. Good simulation-based practice addresses the health care professional's needs in a practical and clinically relevant way that has immediate application to daily professional activities. Simulation provides immediate feedback and gives the health care professional a chance to complete the task using knowledge of errors or complications experienced during the first practice session. The stimulation activity should have clearly delineated performance expectations that are defined by an expert and can be objectively measured and used to provide very specific feedback.

Simulation allows multiple learning objectives to be taught in a realistic clinical environment without harming patients. Students are exposed to a realistic situation that could be community or hospital based and will need to combine their assessment and clinical decision-making skills with communication, teamwork and management to care for the simulated patient(s). Following the simulation, the learners are

able to reflect on their performances with a facilitator. By discussing their areas of strength and development in line with current evidence, they can begin to improve their competence, and ultimately, confidence. This learning can be consolidated back into practice.

Educating the nursing students by implementing a regular simulation-based team training program, we can boost the skills, knowledge, and ultimately confidence levels in airway management amongst these groups of students.

Statement Of The Problem

An evaluative study to assess the effectiveness of simulation on airway adjuncts upon competency (knowledge and skill) of nursing students.

OBJECTIVES OF THE STUDY

To determine the effectiveness of Simulation on Airway Adjuncts by comparing the competency (knowledge and skill) on airway adjuncts among the control and experimental group of nursing students

MATERIALS AND METHODS

A quantitative research approach with quasi experimental research design was used.

A sample of 90 nursing students were selected by total enumerative sampling technique, out of which 45 each in control group and experimental group. Pretest knowledge and practice airway adjuncts such as oropharyngeal and nasopharyngeal airway were assessed in both groups. Simulation based learning on airway adjuncts was administered to experimental group of nursing students through powerpoint, Demonstration of Skills using Simulation Scenarios on Mannequins, and Debriefing. Posttest of Knowledge and Observation of Skill of Nursing Students in Simulation Scenarios was assessed by a team of faculty in Batches of 5 each using 5 mannequins was done after one week using Structured knowledge Questionnaire on Airway Adjuncts, Observation Checklist for Skill of Insertion of Airway Adjuncts. A pilot study was conducted to establish feasibility and researchability of the study after obtaining setting permission, participants consent and brief introduction about the study was given

to participants. The data regarding demographic variable proforma of student nurses, structured knowledge questionnaire on airway adjuncts among student nurses was collected by self reporting method. The practice was assessed by using observation checklist on airway adjuncts skills. The collected data were organized and analysed using descriptive and inferential statistics.

RESULTS AND DISCUSSION

The data were analyzed after completion of data collection in Apollo College of Nursing, Chennai. Analysis was done according to the objectives and hypothesis of the study.

More than half of the student nurses were belongs to the age group of 21 years (61%,55%), secured more than distinction marks (59%,57%) and majority of them were from Tamilnadu (82%,75%) in control group and experimental group respectively.

There was a significant difference in post-test mean knowledge scores on airway adjuncts between control ($M = 10.86/30$, $SD = 4.73$) and experiment group ($M = 18.97/30$ & $SD = 2.17$) of nursing students with 't' value of 10.29 at $p < 0.001$ and significant difference in post-test mean skills scores on airway adjuncts between control ($M = 9.6/20$, $SD = 2.85$) and experiment group ($M = 14.55/20$ & $SD = 2.62$) of nursing students with 't' value of 14.26 at $p < 0.001$. There was a significant correlation between Overall Knowledge and skill on Airway of Nursing Students Following study also supporting the current study conducted by Ahmed, (2015) among 102 nurses who was worked in CCU, ICU, Emergency Unit and assessed their knowledge and practices with Airway adjuncts by using Self-administered questionnaire sheet related to demographic characteristics of the nurses, and observational checklist for nurses' practice regarding.

The study showed that the percentage of successful Knowledge about airway adjuncts is 74.5%. While the proportion of failures 25.5%. For the practical part of questionnaire the number of successful was 93.1%. While the proportion of failures 6.9%. There is no significant association of knowledge and Practices with demographic data.

CONCLUSION

Educating the nursing students by implementing a regular simulation-based team training program, can ultimately enhance the confidence levels in airway management in Real life Clinical Settings. The characteristics of this new training model is safe, effective, and feasible to implement and evaluate objectively in any settings and suggest that its implementation may contribute to increased level of knowledge and skills among nursing students.

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Table.1. Frequency & Percentage Distribution of Background Variables among Nursing Students.

Demographic Variables	Control Group (n=45)		Experimental Group (n=45)	
	f	%	f	%
Age in Years				
20	18	39	21	45
21	27	61	24	55
Native state				
Tamilnadu	36	82	33	75
Kerala	9	18	12	25

Table 2 Comparison of knowledge and Skills on Airway adjuncts between Control & Experimental Group of Nursing Students

Competency	Control Group (n=45)		Experimental Group (n=45)		t value and p value
	Mean	S.D	Mean	S.D	
Knowledge	10.86	4.73	18.97	2.17	10.29 $P < 0.001$
Skill	9.6	2.85	14.55	2.62	14.26 $P < 0.001$

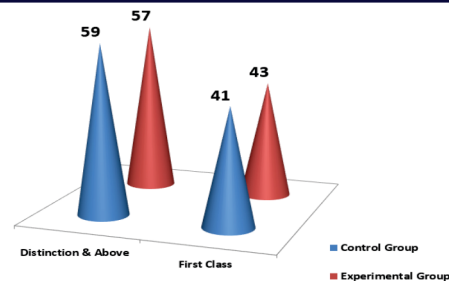


Fig :1 Previous year academic performance of Nursing Students.

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