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Evaluate the Effectiveness of Simulation-based Learning on Knowledge, Decision-making Ability, and Skills Regarding the Management of Obstructed Labour among Nursing Students: A Pilot Study

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ABSTRACT

Introduction: Obstructed labour remains a major contributor to maternal and perinatal morbidity and mortality, particularly in low and middle-income countries. Nursing students play a vital role in early identification and management; however, they often lack adequate knowledge, decision-making ability, and clinical skills. Simulation-based learning is an innovative teaching strategy that provides a safe and realistic environment to enhance clinical competence. Aim**:** To assess the effectiveness of simulation-based learning on knowledge, decision-making ability, and skills related to the management of obstructed labor among nursing Students.

Materials and Methods: A quantitative research approach with quasi-experimental research study using a non-equivalent control group pre-test–post-test design was conducted among 18 nursing students selected through purposive sampling. The nursing students were divided into experimental and comparison groups. Data were collected using a nursing student profile, structured knowledge questionnaire, structured decision-making ability questionnaire, and structured observational checklist to assess baseline demographic data, knowledge, decision making ability and skills of nursing students regarding management of obstructed labour. Simulation based learning on management of obstructed labour on common four conditions i.e., cephalopelvic disproportion, shoulder dystocia, prolonged labour and occipitoposterior position was administered to the experimental group for four consecutive days and simulation on one condition was administered on each day (Day 2-5) while the comparison group were having regular posting as per their master rotation plan. Data were analysed using descriptive and inferential statistics (Chi-square test, independent t-test, paired t-test, and correlation). Based on the pilot study findings, Cohen's formula was used to estimate the sample size for the final study was 120 including 10% of attrition rate.

Results: Post-test findings showed a statistically significant difference between Experimental and comparison group in terms of knowledge (t=2.60, p=0.01)*, decision making ability (t=1.72, p=0.10^{NS}) and skills (t=4.38, p=0.01*). Paired t-test results also showed a significant improvement between pre-test and post-test scores within the experimental group. (t=7.96, p=0.001*), and comparison group (t=5.41, p=0.001*). Furthermore, a significant correlation was found between knowledge and skills (r=0.72, p=0.03*).

Conclusion: Based on the findings of the pilot study, simulation-based learning is an effective teaching strategy for improving knowledge, decision-making ability, and skills among nursing students regarding the management of obstructed labor. Thus, simulation-based learning was found to be a feasible, safe, and easily implementable teaching strategy within the nursing education setting.

Keywords: Decision-making abilities, Knowledge, Nursing students, Obstructed labor, Simulation based learning, Skills.

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