

Effectiveness of an Intervention Program on Nurses' Practices toward Neonatal Intubation Suctioning Procedure at Neonatal Intensive Care Unit

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ABSTRACT

Intubation secretion suctioning is a scientific technique carried out by intensive care nurses to keep the airway open and hence the blood oxygen saturation level within normal range. The fluid suctioning process is one of the essential procedures and priorities for nursing performance in care.

Objectives: This study aimed to determine the effectiveness of an intervention program on Nurses' practices toward neonatal intubation suctioning procedure at neonatal intensive care unit.

Methodology: This is a pre-experiment design conducted on nurses working in the Intensive Care Unit at Pediatric Teaching Hospital. It started from September 30, 2021 to March 15, 2022. An observational method was adopted to collect a sample of 24 nurses to analyze the effectiveness of an intervention program on nurses' practices. A two-part checklist was developed. The validity of the instrument was determined by a committee consisting of (10) specialists from different areas. SPSS version 24.0 was used to analyze the data.

Results: The results of the study showed that the neonatal intensive care unit nurses who participated in the sample numbered (24), the practices towards suctioning intubation fluids were within a low and insufficient level in the pre-test, while the post-test for all three procedures domain were within the acceptable average level.

Conclusions: The study showed that there are significant differences in the impact of the program on nurses' practices before and after implementing the program on nurses, and this indicates an improvement in the work and practices of intensive care nurses towards implementing the procedure of suctioning intubation secretion for the neonatal.

Recommendation: Implementation of the interventional program for nurses' practices and circulating to nurses in all intensive care units Designing a guidebook for the program's steps and the steps of the procedure for withdrawing fluid from the respiratory tract of the neonatal.

Keywords: Intervention Program, Nurses' Practices, Suctioning Procedure.

INTRODUCTION

A neonatal intensive care unit (NICU) is an intensive care unit that specializes in newborn or premature infant care. Neonatal refers to the first 28 days of life. Specialized newborn care (sometimes known as intensive care) has been around since the 1960s. The first American neonatal intensive care unit, developed by Louis Glock¹.

The basic goal of neonatal care for high-risk babies is to keep them breathing. This is normally done using an artificial airway such as endotracheal intubation. Endotracheal aspiration is commonly required to clear the airway in these patients due to the potential of endotracheal intubation blockage².

Suctioning of intubation fluids is a systematic process carried out by critical care nurses with the goal of maintaining the airway open and thereby bringing the blood oxygen saturation level back to normal by draining fluids from the neonatal lungs³.

Nurses are the key drivers of hospitals, and hence the single most significant thing that can speed recovery is enhancing their patient care work. As a result, this study evaluated neonatal intensive care unit nurses' approaches for neonatal intubation suctioning⁴.

METHODOLOGY

The pre-experimental design was applied to 24 nurses working in the neonatal intensive care unit of the Pediatric Teaching Hospital. A pre-test was applied to them to assess their needs and practices towards performing the intubation suctioning procedure. The study started from September 30, 2021 to March 15, 2022. Before starting to collect and implement the program, the researcher collected and distributed approval papers to conduct the research and took the consent of the research participants. The program was explained to them and informed that the researcher had no objection to withdrawing from participation at any time they did not want to. The initial evaluation procedure was carried out on all 24 male and female nurses. The Pilot study data was collected by applying the program details before and after on 5 nurses, and their results regarding the withdrawal implementation steps were low and insufficient. Therefore, the demographic information

domain for neonatal intensive care nurses was carried out by the intervention method and the questionnaire items for the second domain of 60 items that include procedures for suctioning from neonatal with a scale (2) for apply and not applied (1) by direct observation method.

The validity of the questionnaire and the program was tested by 10 experts from different specialties. The program lasted for four weeks and two days per week. Implementation of the program on a doll and patients in neonatal intensive care. The program consisted of four parts, each part. The application of the fluid suctioning procedure took intubation from 45 to 60 minutes. Use the statistical program to analyse the results SPSS (Statistical Package for Social Sciences) version 24.

RESULTS

The result of the current study reported that the most of nurses' gender above two third in the sample were female. while the majority of age group were one third within first age group. As for the nurses' educational axis, more than half of the sample are graduates of a bachelor's degree in nursing and have experience from 1 to 5 years. With regard to service in the neonatal intensive care unit, the majority of them have service within the first category from 1-5 years. As for the training courses, they were less than what was required and most of them took sources of information from unreliable internet sources.

Three Domains: General preparations by the nurse before performing the procedure for intubation suctioning procedure Implementation of the procedure for intubation suctioning procedure Nurses' interventions after performing intubation suctioning procedure total

Table 1: Significant differences between pre- and post-testing of the study sample were observed in each of the study's major topics of study at a P value of 0.000 from intubation through neonatal fluid suctioning procedures.

Table-1: Using the T-Test, compare the significance of pre- and post-test performance scores for the study sample.

N	Pre-test			post test			T	P	Sig.
	M.S	SD	Df	M.S	SD	df			
24	1.60	0.49	23	2.81	0.43	23	10.070	0.000	H.S
24	1.80	0.53	23	2.72	0.52	23	6.260	0.000	H.S
24	1.10	0.38	23	2.69	0.69	23	10.473	0.000	H.S
24	1.5	0.46	23	2.74	0.54	23	8.93	0.000	H.S

N: number, M.S: Mean Score, SD: Standard Deviation, df: degree of freedom, t: t-test, H.S: highly significant at the P-value (0.05)

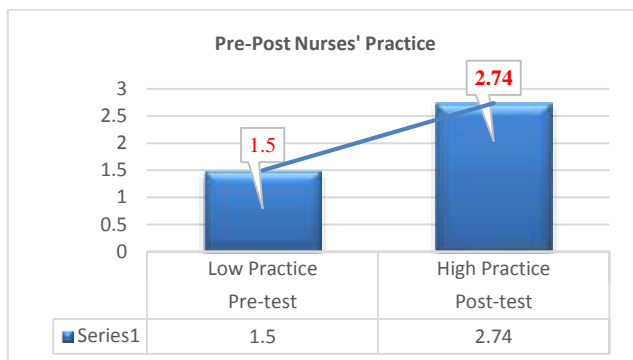


Figure 2: Comparison of nurses' pre and posttest practice scores for all steps of suctioning procedure from intubation for neonatal.

DISCUSSION

According to the current study's findings, the majority of nurses over two-thirds of the sample were female. While the first age group accounted one-third age group. In terms of education, more than half of the nurses holds a bachelor's degree in nursing and has between one and five years of experience. When it comes to neonatal intensive care unit service, the majority of them fall into the first category of 1-5 years. Concerning the training courses, they were far less than what was required, and the majority relied on untrustworthy Internet sources for information. This study object to evaluate of Nurses' Practices toward Neonatal Intubation Suctioning Procedure at Neonatal Intensive Care Unit.

The study employed a cross-sectional design to measure ICU Iraqi nurses' knowledge and practice of endotracheal aspiration in patients, as well as to connect knowledge and practice with demographic variables. The study discovered that the majority of the study samples were males (70%) and the remainder were females (60%) aged 20-29 years in nursing, with (68%) of them having completed an intensive care unit training course⁵.

A descriptive cross-sectional study was conducted on 48 nurses who worked in the newborn intensive care unit at Ahvaz Medical Sciences training facilities; 83.4 percent of employees were female, 16.6 percent were male, and the majority were between the ages of 26 and 35. 54.1 percent received intensive care training on the job. 52.1 percent of nurses have less than five years of experience working in intensive care units⁶.

The effectiveness of the interventional program is observed through the results of the second table of the steps for suctioning intubation procedure for neonatal. The researcher found that the pre-test was among the unacceptable and insufficient practices, but it improved after implementing the program for all 24 nurses in the intensive care unit. Two intensive care units used a twenty-item control table to assess how critical care nurses (n = 45) perform endotracheal aspiration and compliance with current best practices. As expected, participants who underwent various tracheal aspiration operations had a lower score. The extent to which participants received excessive oxygenation, infection control measures, and the amount of negative pressure utilized to eliminate secretions differed significantly. When doing endotracheal aspiration, critical care nurses do not follow best practices. There is an Irish/European viewpoint on the everyday aspiration techniques used by critical care nurses⁷.

According to the current study, the majority of nurses working in intensive care units performed satisfactorily, with 64.6 percent performing well and 35.4 percent performing moderately to poorly. Suctioning the endotracheal tube⁸.

A cross-sectional study of (50) nurses working in an intensive care unit in Baghdad discovered that these nurses have the greatest level of practical knowledge and that there is no statistically significant relationship between demographic variables with nurse knowledge and practice levels⁹.

CONCLUSIONS

The researcher concluded that most of the neonatal care nurses do not use reliable sources to update their information to develop their applied practices, and due to the lack of experience of most nurses, most of them are also young nurse, so we conclude from the results of the current study that continuous courses are conducted towards the practical side, and nurses who have experience are mixed with young nurse among them, and he conducted training workshops among the intensive care units in the various governorates of Baghdad and the governorates of Iraq.

Acknowledgements: The author funded this study. We appreciate the nurses at Pediatric Teaching Hospital who consented to participate in this study. The researcher gave all subjects informed consent to nurses in the study. The study's aims were described orally, and nurses agreed to participate.

Data availability statement: The corresponding author will share data supporting the study conclusions upon reasonable request.

Funding: This study was not funded.

Conflicts of interest: This study is not biased and has not been submitted for publication to a journal or other venue.

Financial resources: The researcher have no financial interest in the subject matter mentioned in this work.

Informed consent: All participants were requested to consent before to the survey.

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