MOSUL JOURNAL OF NURSING
Online ISSN: 2663-0311 - Print ISSN: 2311-8784
Website: https://mjn.mosuljournals.com

RESEARCH ARTICLE

Assessment of Nurses' Practices toward Enteral Feeding Tube for Premature Neonates

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ABSTRACT

Background: *To ensure safe and successful enteral feeding, precise tube insertion in the stomach's body is critical. In fact, feeding tube malposition has been linked to gastric bleeding, aspiration, and gastro-oesophageal reflux problems. Mechanical complications such as tube obstruction, displacement, or dislodgement, as well as infection-related complications, occur infrequently as a result of formula handling, storage, and administration.*

Objective: *This study aims to assess nurses' practices toward enteral feeding tube for premature neonates.*

Methodology: *This study is a complementary section of a larger study, where a quasi-experimental design using test-retest approach for study group and control group participants employed in Kirkuk City Hospitals being, evaluated in several periods, in this pare the focus is only upon the pre-test period. Data collection is done by self-administrated questionnaire form, and it was given for nurses to answer after taking their agreement. A non - probability purposive sample selected from nurses who were working at the neonatal intensive critical care units. The sample was forty nurses, (20) nurses enrolled as a control group and (20) nurses enrolled as a study group. The study group participants were exposed to an interventional program. The selection criteria included Only pediatric' nurses who have from (1-15) years of experience at critical care units.*

Results: *The finding of this study revealed that nurses have low level of practice regarding the insertion and initiating continuous enteral feeding at the pretest.*

Conclusion: *This study concluded that nurses at the NICU have middle to low level of practice concerning the standard procedures of insertion enteral feeding tube, and initiating enteral feeding.*

Keywords: *Assessment, Nurses, practices, Enteral Feeding Tube, Premature Neonates, Neonatal Intensive Care Unit.*

Received: 28 Febrauary 2022, Accepted: 27 April 2022, Available online: 21 July 2022

INTRODUCTION

To ensure safe and successful enteral feeding, precise tube insertion in the stomach's body is critical. In fact, feeding tube malposition has been linked to gastric bleeding, aspiration, and gastro-oesophageal reflux problems. Mechanical complications such as tube obstruction, displacement, or dislodgement, as well as infection-related complications, occur infrequently as a result of formula handling, storage, and administration (Thoene et al., 2018).

Nurses play a crucial role in nutritional assistance because they are in charge of giving nutritional formula. Enteral feeding is the most common way for providing a complete meal to infants, and it is linked to a shorter hospital stay, lower mortality, cheaper costs, and less difficulties for infants (Seres, 2010). Pediatric nurses who already are responsible for giving enteral feeding must have appropriate expertise and clearly defined tasks in order to provide effective care (Magda & Youssef, 2019).

For high-risk infants, enteral feeding is the primary method of nutrition. As a result, nurses' perceptions and bedside observation of enteral feeding should be given special attention (Magda & Youssef, 2019).

Ensuring that critically ill patients receive adequate enteral nutrition lowers consequences and improved outcomes. Unfortunately, people who require feedings via oronasogastric feeding tubes rarely achieve their feeding goals (Parker et al., 2019).

Complications from improperly installed feeding tubes occur frequently. Unintended placement into the respiratory tract is the most common, owing to the fact that blind tube insertions can easily take the wrong path into the trachea rather than the esophagus. A number of organizations have expressed alarm as a result of this (Metheny et al., 2007).

For premature newborns, current parenteral and enteral nutrition standards are meant to deliver nutrients that approach the growth rate and composition of weight gain in order to maintain normal blood and tissue nutrient concentrations. Because there is less exposure to a central venous catheter, enteral nutrition is much more physiologic, less costly, and safer than parenteral nutrition (Koletzko et al., 2014). Early enteral feeding initiation is linked to lower gastrointestinal inflammation and has immunologic benefits (Viswanathan et al., 2017).

All areas of nursing care, including feeding, are constantly changing. As a result, it's critical for pediatric nurses to stay up to date on the latest research, and special emphasis should be paid to nurses' perceptions and bedside observations of enteral feeding tubes, because pediatric nurses are in charge of supplying necessary nutrients to infants. The nurses' perspective of enteral feeding is a critical aspect in preventing problems, as well as the appropriateness and convenience of nursing involvement, which are required for efficient enteral feeding (Dutta et al., 2015).

Nurses play a crucial role in nutritional assistance because they are in charge of giving nutritional formula. Enteral feeding is by far the most common way for providing a complete meal to infants, and it is linked to a shorter hospital stay, lower mortality, cheaper costs, and less difficulties to infants (Seres, 2010). Pediatric nurses who are accountable for providing enteral feeding must have appropriate expertise and clearly defined tasks in order to provide effective care (Magda & Youssef, 2019).

According to Magda and Youssef (2019), continuing education programs should be provided on a regular basis to refresh and update nurses' perceptions and practices, as well as reinforce proper enteral feeding methods. Furthermore, the effectiveness of such courses on nurses is continually assessed by supervision or guidance of their clinical abilities, particularly in enteral feeding care. The survival of preterm children, especially those with very low birth weight, is improving all the time thanks to clinical and scientific advances in neonatology. As a result, the emphasis is shifting to bettering therapy and outcomes. Appropriate and early enteral feeding of preterm newborns is a crucial goal. Because of poor sucking and a lack of suck–swallow–breath coordination, the majority of preterm infants must be fed via gavage (Schriever et al., 2018).

Over 15 million infants are delivered prematurely every year around the world, according to the WHO. Premature birth complications are the top cause of death among children under the age of five worldwide (WHO, 2015). Every year, more than 1 million enteral tubes are inserted. A total of more than 2,000 feeding tube insertions were examined. Malposition was found in 1.3–2.4 percent of NG tubes, with 28 percent of those resulting in respiratory difficulties (Nayef & Neamah, 2013).

Protocols and guidelines, programs, workshops, training events, and seminars related to the nasogastric feeding tube, reducing nosocomial infection rates, parental education, enhancing discharge planning, and our infants'/families' follow-up needs. In addition, future research on enteral feeding tubes is being planned. The results

of a survey revealed the variability and confusion around enteral feeding treatment in pediatric intensive care units. The authors argue that their study represents a good starting point for identifying key areas of concern and inconsistency, and that national consensus standards for enteral feeding in pediatric intensive care units are needed (Tume et al., 2013).

METHOD

The study was designed as a quasi-experimental design using test-retest approach for study group and control group participants employed in Kirkuk City Hospitals being, evaluated in three periods pre-test, post-test-1, and post-test-2. The study group participants are tested prior implementing the interventional program, the interventional program lectures started from (15th - 22th of February 2022 to the study group). A non - probability purposive sample selected from nurses who were working at the critical care units in Azadi Teaching Hospital, Kirkuk General Hospital, Pediatric Hospital, and Gynecology and Pediatric Hospital. The sample was 40 nurses, (20) nurses enrolled as a control group and (20) nurses enrolled as a study group. The study group participants were exposed to an interventional program after the assessment stage. The selection criteria included Only pediatric' nurses who have from (1-15) years of experience at critical care units. The data analysis approaches were used in order to analyze and assess the results of the study under the application of the statistical package (SPSS) ver. (22.0).

RESULTS

Table1: Sign Score of Assessment through the "Relative sufficiency" Among the Three Period (Pre, Post I and Post II) at Overall Items for nurses practice related to insertion of the enteral feeding tube for the premature neonates study group

Items Related to practice	One Period		Ass.	Two Period		Ass.	Sign.
	Pre	Post I		Pre	Post II		
	R.S.%	R.S.%		R.S.%	R.S.%		
Putting instructions for contraindications and explanatory signs on the door of the room of the premature neonates	43.3	80	1:3	43.3	78.3	1:3	0+
Provide clarification on the steps and actions that must be taken to complete the intervention	33.3	98.3	1:3	33.3	98.3	1:3	0+
Washing hands with soap and other disinfectants using standard sterile technology	33.3	83.3	1:3	33.3	81.7	1:3	0+
Wear medical paws before starting any procedure with the premature neonates	33.3	86.7	1:3	33.3	90	1:3	0+

Prepare all the tools needed to perform the intestinal feeding tube for the premature neonates	36.7	100	1:3	36.7	100	1:3	0+
Choosing the right size of the enteral feeding tube for a premature neonates	53.3	100	1:3	53.3	100	1:3	0+
Determining the method of introduction through the nose or through the mouth	33.3	76.7	1:2	33.3	75	1:2	0+
Determining the length of the tube on the body of the premature neonates, by measuring the distance from the stomach trench to the ear loop and then to the place of insertion (nose or mouth)	33.3	90	1:3	33.3	80	1:3	0+
Gently examine the nostrils to check that they are clear if the tube was inserted through the nose into the stomach	53.3	100	1:3	53.3	96.7	1:3	0+
Wetting the tube head before insertion	80	100	3:3	80	98.3	3:3	0+
Supporting the head of the premature neonates by placing the hand behind his neck	56.7	100	2:3	56.7	98.3	2:3	0+
The enteral tube is placed perpendicular to the face of the premature neonates	76.7	100	2:3	76.7	98.3	2:3	0+
Inserting the intestinal tube in a gentle way while monitoring the condition of the premature neonates.	33.3	98.3	1:3	33.3	96.7	1:3	0+
Monitoring the level of oxygen and the number of heartbeats with the state of consciousness of the premature neonates.	66.7	100	2:3	66.7	95	2:3	0+
Monitoring the state of respiration with monitoring of the number of breaths per minute After completing the enteral tube insertion.	33.3	98.3	1:3	33.3	98.3	1:3	0+
Ensure that the tube is placed in the correct place by pushing a few ml of air into the syringe Put the stethoscope on the stomach trench and make sure to hear gurgling sounds.	40	100	1:3	40	96.7	1:3	0+
Intake of air using the same syringe And make sure that gastric juice appears.	33.3	98.3	1:3	33.3	96.7	1:3	0+
Fixation of the enteral tube by placing a plaster on the enteral tube.	53.3	86.7	1:3	53.3	88.3	1:3	0+
Put a piece of plaster on it, the size of the tube and the date of insertion.	33.3	80	1:3	33.3	80	1:3	0+
Remove medical paws in the appropriate manner and wash hands.	40	91.7	1:3	40	86.7	1:3	0+

DISCUSSION

The results of the pretest revealed that nurses had a low level of practice initiating continuous enteral feeding at the pretest, placing them in the low level of practice class. Furthermore, there is no statistically significant difference between the mean score of nurses practicing at three different periods of the test.

In the same context as this study, previous research has revealed that initiating early enteral feedings protects the developing premature GI system and likely contributes to the prevention of later GI disorders and sepsis, independent of the infant's gestational age. As described in this study, enteral feeding was initiated predominantly on the basis of gestational age and birth weight. Enteral tube feeding has been reported to be contraindicated based on a variety of clinical circumstances, including treatment for a PDA, the presence of umbilical catheters, the requirement for vasopressor medication, and oxygen consumption (Gregory & Connolly, 2012).

In terms of enteral feeding initiation, while 45% of respondents claimed they had no precise target period in mind, 24% stated they would initiate within 4–6 hours of PICU admission (Tume et al., 2013).

CONCLUSIONS

This study concluded that nurses at the NICU have middle to low level of practice concerning

the standard procedures of insertion enteral feeding tube and initiating enteral feeding.

RECOMMENDATIONS

Give a special attention to nurses' skills and practice especially those who are recently employed. Initiate regular educational programs to widening nurses' base of knowledge. Keep important resources such as textbooks, journal articles, and videos under the hand of each nurse working in NICUs.

FUNDING

This study received no financing from public, private, or non-profit organizations.

AUTHOR'S CONTRIBUTIONS

Study concept; original draft writing; data collection; data analysis; and final edition review by all authors.

DISCLOSURE STATEMENT:

There are no conflicts of interest reported by the authors.

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