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A study to assess the effectiveness of structured teaching programme regarding tube feeding in neonate on knowledge among RGNM students in selected nursing institution

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Abstract
Many small, sick and premature infants are unable to coordinate sucking, swallowing and breathing, and therefore, require gavage feeding. In gavage feeding, milk feeds are delivered through a tube passed via the nose or mouth into the stomach Intermittent bolus milk feeds may be administered using a syringe to gently push milk into the infant's stomach (push feed). Alternatively, milk can be poured into a syringe attached to the tube and allowed to drip in by gravity.[4] A very little time is devoted for teaching neonatal care in nursing schools. Only eight weeks included in syllabus they distributed three weeks in medical ward, three weeks in surgery ward one week in immunization clinic and one week for well-baby clinic. That means only six weeks actually student works in pediatrics unit. Hence the Researcher was interested to conduct a study on student nurses who are studying in General Nursing Midwifery to impart more knowledge regarding Neonatal tube feeding.

Objectives

1. To evaluate the effectiveness of structured teaching programme on tube feeding in neonate on knowledge among RGNM students.
2. To find the association between knowledge of tube feeding in neonate with selected demographic variables among RGNM students.
3. **Hypothesis**
4. **H_{01}**-There will be no significant difference between pre-test and post- test knowledge score among Revised General Nursing Midwifery students on Neonatal tube feeding.
5. **H_{02}**- There will be no significant association between knowledge score of neonatal tube feeding and selected demographic variables among Revised General Nursing Midwifery students.
6. **H_1**: There will be a significant difference between pre-test and post- test knowledge score among Revised General Nursing Midwifery students on Neonatal tube feeding.
7. **H_2**: There will be a significant association between knowledge score of neonatal tube feeding and selected demographic variables among Revised General Nursing Midwifery students.

Methodology: One group pretest post test design was used. 40 samples were selected by Universal sampling technique**.** Data was collected by using structured questionnaire on Knowledge, the knowledge scores classified into 3 categories: inadequate, moderately inadequate and adequate. Descriptive and inferential statistics were used to analyze the data, and interpretation. Mean value at pre-test was 11.15 which increased to21.47in post-test.

In the pre-test – maximum 27(68%) had inadequate knowledge and minimum 13(32%) had moderately adequate knowledge and no one RGNM students were adequate knowledge on tube feeding in neonate. In the post test – maximum 37(92.5%) RGNM students were having adequate knowledge and no one RGNM students were having inadequate knowledge and remaining 3(7.5%) RGNM students were having moderately adequate knowledge on tube feeding in neonate. It is inferred that there was increase in the level of knowledge of RGNM students regarding tube feeding after the structured teaching program.

Conclusion: The study depicted that Structured Teaching Programme was very effective in increasing Knowledge regarding on tube feeding in neonate among RGNM nursing students.

Keywords: effectiveness, teaching, nursing, institution, Neonatal, General

1. Introduction

"Children are the worlds must valuable resource and its best hope for the future" Hebert Hoover Food is a major concern of the mankind beginning from the time of conception and extending through the entire life span of an individual. The basic food for infant is feeding milk. Breast feeding is the most natural method. Feed is of great importance. It is "must" to meet nutritional as well as emotional and psychological needs of the infant [2]. Nutrition is important in the maintenance of the body system throughout the life cycle. This is especially true during the years of growth and development [3].

A healthy term babies are physiologically mature to withstand and they rapidly adjust to extra-uterine life, with minimal assistance without any serious difficulties or hazards [1]. But the child of any age becomes ill additional stress is placed on the body. When the baby is seriously ill and swallowing and sucking reflexes are absent cannot take food by mouth, tube feeding is advisable for baby to improve the health and nutritional status. So tube feeding may be given by Gavages (the administration of liquid nourishment through Nasogastric tube) or by Gastronomy

(The administration of liquid nourishment through a tube inserted directly in to stomach through the abdominal wall). Tube feeding may improve the nutritional status of the infant [1]. An important aspect of the role of the nurse is to assist the child in maintaining or improving the level of growth and development and prevent complication. Many small, sick and premature infants are unable to coordinate sucking, swallowing and breathing, and therefore, require gavage feeding. In gavage feeding, milk feeds are delivered through a tube passed via the nose or mouth into the stomach Intermittent bolus milk feeds may be administered using a syringe to gently push milk into the infant's stomach (push feed). Alternatively, milk can be poured into a syringe attached to the tube and allowed to drip in by gravity [4]. Nearly 61.3% of all death occurs during the neonatal period. Half of these deaths occur in the first 7 days due to infection and pre-maturity which can be prevented by proper and timely care of the new born [6].

Source: Express news service tags: neonatal mortality rate

A descriptive survey was conducted in a selected hospital, Kolkata with the aim to assess the knowledge and practice of staff nurses regarding Ryle's tube feeding, to find out relationship between knowledge and practice and to find out association with knowledge, practice and some selected variables. 42 staff nurses were selected by convenient sampling technique from the intensive therapeutic unit and high dependency unit of Rabindranath Tagore International Institute of Cardiac Sciences hospital. A structured knowledge questionnaire and structured observation checklist were used to collect data. It was found that 32 (76%) participants had adequate knowledge and all (100%) had more than average practice level regarding Ryle's tube feeding. There was moderately positive correlation between knowledge and practice of staff nurses regarding Ryle's tube feeding (r=0.46). There was significant association between knowledge with professional qualification and period of experience but there was no significant association found between practice with period of experience and professional qualification. Though the study findings indicated that the nurses had necessary knowledge and practice regarding Ryle's tube feeding but it was found that the hospital was not having any written guideline regarding Ryle's tube feeding for the patients. So the researchers recommended for continuous teaching program and establishment of evidenced based guideline in the hospital on Ryle's tube feeding [8].

A very little time is devoted for teaching neonatal care in nursing schools. Only eight weeks included in syllabus they distributed three weeks in medical ward, three weeks in surgery ward one week in immunization clinic and one week for well-baby clinic. That means only six weeks actually student works in pediatrics unit. Hence the Researcher interested to conduct a study on student nurses who are studying in General Nursing Midwifery to impart more knowledge regarding Neonatal tube feeding.

Objectives of the study

1. To evaluate the effectiveness of structured teaching programme on tube feeding in neonate on knowledge among RGNM students.
2. To find the association between knowledge of tube feeding in neonate with selected demographic variables among RGNM students.

Hypothesis

H_{01}- There will be no significant difference between pre test and post- test knowledge score among Revised General Nursing Midwifery students on Neonatal tube feeding.

H_{02}- There will be no significant association between knowledge score of neonatal tube feeding and selected demographic variables among Revised General Nursing Midwifery students.

H_1 – There will be a significant difference between pre test and post- test knowledge score among Revised General Nursing Midwifery students on Neonatal tube feeding.

H_2 – There will be a significant association between knowledge score of neonatal tube feeding and selected demographic variables among Revised General Nursing Midwifery students.

Material and Method

Research Approach: Quantitative Approach

Research Design: Pre experimental one group pre-test post-test design

Setting: Selected Nursing institution

Population

Revised General Nursing Midwifery Students who are studying in selected nursing institution.

Sample: Revised General Nursing Midwifery students.

Sampling Technique: Non-probability Purposive Sampling

Sample size: 40 nursing students who fulfilled the criteria

Inclusive criteria

Revised General Nursing Midwifery students

1. Who are studying in the 3rdyear including both male and female.
2. Who are available at the time of data collection.

Exclusive criteria

Revised General Nursing Midwifery students

1. Who are not willing for data collection.

Tool and technique

Part I

The first part of the tool consists of 10items for obtaining information of the selected background factors such as age, gender, place of residence, educational status of the father and mother, occupational status of father and mother, family income,medium of education up to HSC and previous procedure done and clinical experience in NICU etc.

Part II

Self-administered knowledge questionnaire was prepared in the form of multiple choice questions. It consists of 20 items regarding the neonatal tube feeding. Total score is 25.

For every right answer the score is – 1

For every wrong answer the score is – 0

The knowledge level has been arbitrarily divided in to three categories based on the knowledge score.

- adequate knowledge: >75%
- Moderately Adequate knowledge: 50% - 75%
- Inadequate knowledge: <50%

Structured Teaching Programme

The topic was divided into 10 sub topics. They are definition of Neonatal Tube Feeding, indications of naso-gastric tube feeding, types of tube feeding, articles used for

the procedure, principles of tube feeding, nurses' responsibility before procedure. Various steps of neonatal tube feeding procedure.

Selection and preparation of audio visual aids:
Black board, charts and Liquid crystal display, poster, handout are considered appropriate.

Determining of physical facilities
It was planned to consult the selected institutions to conduct the STP in seminar hall/ teaching room with available facilities.

Data Collection Procedure
Data collection procedure Permission had taken from the institutional head there after the brief self-introduction was given and the inform consent was obtained from the GNM students who met the inclusion criteria were selected by purposive sampling technique. After the collection of demographic data pre-test was done by using structured questionnaire for assessing the level of knowledge regarding Neonatal Tube Fedding. Thus, the post test was done by 8th day after structured teaching program

Results
Section 1: Distribution of RGNM students in relation to demographic variables

Table 1: Demographic Variables Frequency Percentage

Sr. No	Demographic Variables	Frequency	Percentage
1	Age		
	17 – 22 year	33	82.5
	23 - 27 year	07	17.5
	28 – 32 year	00	00
	33 - 35 years	00	00
2.	Gender		
	Male	3	7.5
	Female	37	92.5
3.	Education of Mother of RGNM students related to nursing profession		
	Diploma	08	20
	Degree	00	00
	Master degree	00	00
	Ph D	00	00
	None of this	32	80
4.	Education of Father of RGNM students related to nursing profession		
	Diploma	03	07
	Degree	00	00
	Master degree	00	00
	Ph D	00	00
	None of this	37	93
5.	Place of residence		
	Rural	17	43
	Urban	23	57
6.	Occupation of parents		
	Labor	18	45
	Nursing profession	5	12.5
	Government job	5	12.5
	Private	12	30
7	Medium of Education up to HSC		
	English	06	15
	Marathi	34	85
	Hindi	00	00
	Any other	00	00
8.	Source of knowledge		
	Knowledge from subject teacher	33	82.5
	News paper	02	5
	Demonstration	01	2.5
	Self-experience	04	10
9.	Work in NICU and care with neonate		
	Yes	07	17.5
	No	33	82.5
10	Total weeks work experience in NICU.		
	One week	04	10
	Two week	03	7.5
	Three week	00	00
	No experience	33	82.5

Section II: Analysis and interpretation of pre-test knowledge score of RGNM students regarding tube feeding

Table 2: Percentage, distribution of samples according to their score with pre & post test (N=40)

Score	Pre Test	Post Test	Pre Test	Post Test
	No of students	%	No of Students	%
Inadequate (≤12)	27	67.5%	00	00
Moderately Adequate (13-19)	13	32.%	03	7.5%
Adequate (≥20)	00	00	37	92.5%
Total	40	100%	40	100%

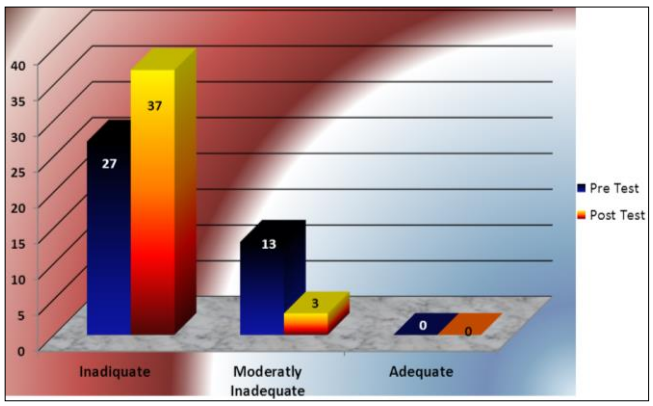

Fig 1: Percentage, distribution of samples according to their score with pre & post test

Section III: Analysis of effectiveness of structured teaching programme on knowledge by comparing pretest and posttest scores

Table 3: Comparison of Mean Score in Pre & Post test

	Mean	SD	t-test	p-value
Pre test	11.150	2.607	27.56	P<0.0001 S
Post Test	21.475	1.368		

There was a statistically significant difference between the pre-test and post test level of knowledge score on tube feeding in neonate among RGNM students before and after the structured teaching programme.(p=0.0001)
Hence the null hypothesis is rejected and research hypothesis is accepted.

Section IV

Table 4: Association of the pre-test knowledge score with the selected demographic variables

Sr.no	Demographic variables	Calculated X^2 value	Level of significance
1.	Age	0.060	P=0.807 NS
2.	Gender	0.001	P=0.974 NS
3.	Education of mother related to nursing education	4.10	P=0.043 Significant
4	Education of father related to nursing	0.001	P=0.974 NS
5.	Place of residence	0.105	P=0.746 NS
6	Occupation of parents	4.37	P=0.224NS
7	Medium of education up to HSC	0.002	P=0.962NS
8	Source of knowledge	4.08	P=0.252NS
9	Work in NICU	1.28	P=0.257 NS

Table No.17 and figure 17 shows that out of 8RGNM students mother education were diploma in nursing, 3(37.5%) RGNM students were having inadequate knowledge of tube feeding in neonate. And 5 (62.5%) of RGNM students were having moderately adequate knowledge whereas no one RGNM students having adequate knowledge of tube feeding in neonate.
Out of 32 RGNM students mothers education were not related to nursing education maximum RGNM students i.e 24(75.0%) were having inadequate knowledge 8 (25.0%) were having moderately adequate knowledge and no one RGNM students having adequate level of knowledge regarding tube feeding in neonate.
There was significant association between education of mother related to nursing profession and pre test knowledge score. (p=0.043)

Nursing Implications
According to oxford dictionary 'recommendation means an official suggestion about the best thing to do.'
The present study was conducted to evaluate the effectiveness of structured teaching programme on knowledge regarding tube feeding in neonate among RGNM students in the selected nursing institution. The findings of the study have implication in the field of nursing education, nursing practice, nursing research and nursing administration.
In the present research study following recommendation are made.

Nursing Education
Nursing education is developing rapidly in India and nurse is providing care through base of scientific nursing education. So knowledge and clinical demonstration of its care is part of academic syllabus. It must be included in syllabus and knowledge and practice can be reemphasized for student by making them to attend, Seminar, Conference, Workshop

- During clinical students get opportunity to care for neonate during the tube feeding by giving care so this knowledge will make them confident to care for neonate and their family and educate them and their family. This research study, methodology, analysis will be a guideline for student nurses in their future.

Nursing Administration

- Nurse administrator can develop their own hospital policy of tube feeding in neonate.
- Nurse administrator can guide the students about neonatal tube feeding and how to manage their management.
- Nurse administrator would help the staff nurse to update their knowledge about tube feeding in neonate.
- Can arrange in-service education, conference, workshop and seminar on neonatal tube feeding

Nursing Practice

- The finding of the study will help investigator to know the level of knowledge related to neonatal tube feeding.
- The Revised General Nursing Midwifery student will apply this knowledge effectively during neonatal tube feeding.
- This study hopes to increase the knowledge and of Revised General Nursing Midwifery students regarding neonatal tube feeding.

Nursing Research

- This research study covered knowledge aspect of tube feeding in neonate. This study finding can be used as review of literature for future research study and also used as source of information of nursing research.
- The same study can be performed on a large number of samples.
- Effectiveness of structured teaching programme on knowledge regarding neonatal tube feeding would be done.

Conclusion

Results of this current study suggest that we should need to continuing education and clinical experience helps to student gain knowledge and prevent complication. Thus there is the need for continued research in this area to identify the most effective way to give neonatal tube feeding.

- The findings of the present study showed that pretest mean score percentage 11.15(SD-2.607%) and observed mean post test 21.475(1.368) of RGNM students about neonatal tube feeding.

References

1. www.indianpediatrics.net/jan 2003-13-20htm.
2. Suraj Gupte, "The Short Text Book paediatric nursing", lordson publishers (P) Ltd, New Delhi,"10th edition, 2004; p113-p114.
3. Dorothy R Marlow, "Text book of paediatric nursing", Harcourt (India) private limited,", 6th edition, 266-267.
4. www.cochranelibrary.com.>2012>Issues 5.
5. AB Desai, J Viswanathan. Achar's "Text book of paediatrics, Orient Longman publishers (P) ltd,", 3rd edition, 2006.
6. K Park. "Text book of preventive and social medicine", Jabalpur M/S BhnarsidarsBhanot publishers, 2009:20th edition, p456-p489.
7. www.pib.nic.in>new net
8. http://medjournal.smu.edu.in/articles/2014july/28.pdf
9. Samita Das, Debasmita Patra, Preetirani Pradhan. Journal of Nursing science practice Critical Care Nurses Knowledge and Skill regarding Enteral Nutrition. https://www.researchgate.net/publication/280496175
10. Nargis Ahamed, Debarchana Mondal. Sikkim Manipal College of Nursing, Gangtok, Sikkim. 2College of Nursing, Asia Heart Foundation, Kolkata. pdf Assessment of Knowledge and Practice of Staff Nurses Regarding Ryle's Tube Feeding in a Selected Hospital of Kolkata http://medjournal.smu.edu.in/articles/2014july/28.
11. Kanwal Preetkaur, Neenavir Singh, Sandhya Ghai. Meenakshiagnihotri a comparative study to assess the effectiveness of live demonstration and video assisted teaching on nasogastric tube feeding on the skill development of nursing students http://medind.nic.in/nad/t15/i4/nadt15i4p163.pdf
12. Maha Abdullah, Warda Mohammed, Manal Ismail. Cairo university nurses' knowledge and practices about administration of medications via nasogastric tube among critically ill patienthttp://www.iiste.org/journals/index.php/jep/article/viewfile/10736/10949 2016.
13. Valeskafernandespasinato, marina carvalhoberbigier. Enternal nutrition therapy in PICU. https://www.ncbi.nlm.nih.gov 2014.
14. Day AS, Whitten KE, Lemberg DA, Clarkson C, Vitug-Sales M, Jackson R, *et al*. Exclusive enteral feeding as primary therapy for Crohn's disease in Australian children and adolescents: a feasible and effective approach. J Gastroenterol Hepatol [abstract], 2006; 21(10):1609-14. Available from: URL:http://www.ncbi.nlm.nih.gov/pubmed/16928225
15. Couper G. Jejunostomy after oesophagectomy: a review of evidence and current practice. ProcNutr Soc. 2011; 70(3):316-20. Available from: URL:http://www.ncbi.nlm.nih.gov/pubmed/21781359.
16. Chang Sc, Huang Cy, Lin Ch, Tu Sl, Chao Ms, Chen Mhthe. Effects of systematic educational interventions about nasogastric tube feeding on caregivers' knowledge and skills and the incidence of feeding complications. 2015; 24(11-12):1567-75. https://www.ncbi.nlm.nih.gov/pubmed/25727457
17. Kanwalpreet Kaur, Neena Vir Singh, Sandhya Ghai, Meenakshi Agnihotri. International Journal of Science and Research (IJSR) ISSN (Online): 2319-7064 Volume 3 Issue 3, March 2014 www.ijsr.net, A comparative study to assess the effectiveness of live demonstration and video assisted teaching on nasogastric tube feeding on the skill development of nursingstudentshttp://medind.nic.in/nad/t15/i4/nadt15i4p163.pdf
18. Touzet S, Beissel A, Denis A, Pillet F, Gauthier-Moulinier H, Hommey S, *et al*. Effectiveness of a nurse educational oral feeding programme on feeding out comes in neonates: protocol for an interrupted time series design. http://www.medscape.com/viewarticle/831962_1 2014
19. Graessel E, Stemmer R, Eichenseer B. Non-invasive techniques and criteria for predicting the proper length for insertion of Nasogastric tube [homepage on the Internet], 2011, 9(1). Available from: http://www.ncbi.nlm.gov/pubmed.com
20. Sarah J Mason, Gillian Harris, Jacqueline Blissett. Tube Feeding in Infancy: Implications for the Development of Normal Eating and Drinking Skillshttp://pediatrics.aappublications.org/content/70/3/

381.short
21. Choi Kup-Sze, He Xuejian, Chiang Vico Chung-Lim, Deng Zhaohong. A virtual reality based simulator for learning nasogastric tube placement. PubMed, 2015.
22. Simmons-stern NR, Budson AE, Ally BA. Feeding dysfunctions in infants with severe chronic renal failure among 15 patients [homepage on the Internet], 2011, 48(10). Available from: http://www.ncbi.nlm.gov/pubmed.com
23. Yu F, Kolanowski A. Complication associated with enteral nutrition by nasogastric tube [homepage on the Internet]. 2009, 30(4). Available from: http://www.ncbi.nlm.gov/pubmed.com
24. Carpenter BD, Zoller SM, Balsis S. Oral and nasal enteral tube placement errors. [homepage on the Internet], 2011, 26(2). Available from: http://www.ncbi.nlm.gov/pubmed.com
25. Huang YH. Placement of Nasoenteric feeding tubes in patients with severe upper gastrointestinal diseases [homepage on the Internet], 2012, 13(6). Available from: http://www.ncbi.nlm.gov/pubmed.com
26. Kuhn D, King SP, Fulton BRS. Mechanical problem with small diameter enteral feeding tubes [homepage on the Internet], 2011, 48(10). Available from: http://www.ncbi.nlm.gov/pubmed.com
27. Ellett Marsha L, Cirgin DNS RN. CGRN what is known about methods of correctly placing gastric tubes in adults and childrenhttp://link.springer.com/article/10.1007/s00455-004-0025-2 2013
28. Emad El-Din Mahmoud, Hanafy Samuel D. Ashebu Niran Al Naqeeb Harini Bopaya Nanda Pericardial sac perforation: a rare complication of neonatal nasogastric tube feeding. www.neonet.ch>COTM Jan 2011
29. Tamara Wallace, Deborah Steward. RN Gastric Tube Use and Care in the NICU http://www.medscape.com/viewarticle/831962_1 2014
30. Tamara Wallace. Graduate Program in Nursing National Survey of Gavage Feeding Practices Used in Very Low Birth Weight Infants https://kb.osu.edu/dspace/bitstream/handle/1811/48956/
31. Denise D, Crosson RN, Rita H. Pickler, RN, PNP, PhDAn Integrated Review of the Literature on Demand Feedings for Preterm Infants. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1236994/
32. Edward Ignatoff, Sharon Stringer, Jayne Brennan, Reena Greenberg, Susan Widmayer, Gene C. AndersonNonnutritive Sucking During Tube Feedings: Effects on Preterm Neonates in an Intensive Care Unit Tiffany Field http://pediatrics.aappublications.org/content/70/3/381.short
33. Cannaby AM, Evans L, Freeman A. Nursing care of patients with Nasogastric feeding tubes, 2012, p366-72.
34. Khattack IA, Khan S, Ullah N. Evaluate the nutritional intake of the infants through nasigastric feeding and the associated complications. 2013; 31(1):6.
35. Mtheny NA, Meert KL, Clourse RE. Complications related to feeding tube placement. 2014; 23(2):178-82.
36. Hanafy Eel-D, Ashebu SD, Naqeeb NA, Nanda HB. Pericardial sac perforation: a rare complication of neonatal nasogastric tube Feeding. 2014; 36(10):1096-8.
37. Polit DE. Bernadette P. Hungler. Nursing research, principles and methods. Lippincot publication Philadelphia; fifth edition, 2005, 431-440.
38. Treece EW, Treece JW. Elements of research in nursing. 3rd ed. St. Louis: The C. V. Mosby Co., 1986.
39. Basvanthappa BT. Nursing Research; second edition; Jaypee publishers, 2007.
40. David woods *et al*. Imporovingoral medicine administration, 2006.