

**NURSES' KNOWLEDGE AND PRACTICE REGARDING NASOGASTRIC TUBE
FEEDING AT A TEACHING HOSPITAL, BHARATPUR****Ankita Kunwar*¹ and Pratima Koirala²**

School of Nursing, Chitwan Medical College, Bharatpur, Chitwan, Nepal.

Received on: 30/05/2019

Revised on: 21/06/2019

Accepted on: 11/07/2019

*Corresponding Author

Ankita KunwarSchool of Nursing, Chitwan
Medical College, Bharatpur,
Chitwan, Nepal.**ABSTRACT**

Nasogastric Tube Feeding (NGT) refers to the feeding tube that is passed through the nose down through the nasopharynx and esophagus into the stomach which is necessary to maintain adequate nutrition and hydration of a patient. The objective of this study is to find out the nurses' knowledge and practice regarding nasogastric tube feeding at a Teaching Hospital, Bharatpur. A descriptive cross-sectional study design was used with 84 nurses working in the different critical care units of Chitwan Medical College Teaching Hospital, Bharatpur by using non probability, enumerative sampling technique. Data were collected by using structured self-administered questionnaire and observational checklist. Data were analyzed in descriptive and inferential statistics by using SPSS (Statistical Package for the Social Sciences) version 20. Result of this study revealed that only one fourth of the respondent had satisfactory level of knowledge and regarding practice more than half of 68.6% of the respondent had unsatisfactory level of practice on NGT. There is significant between the level of knowledge and type of family ($p=0.008$). The significant influencing variable for the level of practice is age ($p=0.010$). There is statistically non significant correlation between knowledge score and practice score of the respondents. It is concluded that there is unsatisfactory level of knowledge among one fourth of nurses' and unsatisfactory level of practice among more than half of the nurses. Therefore, knowledge upgrading programmes should be conducted through in-service education, training and curricular inclusion of NGT to the future nurses.

KEYWORDS: Nasogastric Tube Feeding, Nurses, Knowledge and Practice.**INTRODUCTION**

Nutrition is the intake of food, considered in relation to the body's dietary needs. Good nutrition is an adequate well balanced diet combined with regular physical activity it is a cornerstone of good health.^[7]

Nasogastric tubes are often used in intensive care unit to provide nutritional support to the critically ill patient. A variety of feeding tubes are used in medical practice. The latest available statistics from the National Center for Health Statistics, patients received EN during nearly 251,000 hospital stays in 2012, and 78% of which were adults. Nurses have a important role in delivering the nasogastric tube feeding. Monitoring of its possible complications and care of tube misplacement. Nasogastric tube misplacement includes malnutrition, pulmonary aspiration, and even death. On blind insertion, the rate of lungs placement is usually 1-3%. Inadvertent tube placement in the esophagus was observed in 19 out of 100 blind NG tube insertions.^[2]

Maintaining consistencies in feeding the critically ill has been identified as a problem secondary to the inadequate knowledge of the nurses. Currently in Malawi, there is a few scientific data about nurses' tube feeding

competency and challenges faced when providing enteral feeding. With such lack of evidence it was hypothesized that there is inadequate level of competency in tube feeding among nurses.^[5]

Many bedside verification methods do not allow detection of improper positioning of a feeding tube within the gastrointestinal tract, thereby increasing aspiration risk. Seventy-eight percent of nurses used a variety of methods to verify initial placement of feeding tubes, although 14% were unaware that tube position should be confirmed every 4 hours. Despite the inaccuracy of auscultation methods, only 12% of nurses avoided this practice all of the time.^[3]

Feeding the critically ill patient is a unique challenge in nutritional management. Nutritional support should be started as soon as possible after admission and should be maintained as long as the patient does not eat adequately as prolonged starvation increases the risk of morbidity and mortality. Enteral nutrition is the preferred route of nutrient administration in the critically ill patient. It maintains the integrity of the gut mucosa and has immunologic advantages over parenteral nutrition. Adequate nutritional support is important for the

comprehensive management of patients in intensive care units (ICUs). Enteral nutrition (EN) is one of the most efficient nutritional methods in intensive care. It has gained popularity over other nutritional methods in terms of promoting patient immunity and enhancing better survival in addition to its cost effectiveness. Nurses in intensive care are in a key position to maintaining patients' nutritional status.^[4]

Literature on nurses' knowledge and practices regarding nasogastric tube feeding concerning enteral nutrition where nurses also play a important role in feeding the critically ill is very scanty. Nurses' practices in nutritional support are not evidence-based of their knowledge and practice and has demonstrated poor knowledge and practices. Continue education and in-service education are not adequate which directly and indirectly influence the nurses' knowledge and practices.^[6]

MATERIALS AND METHODS

Descriptive cross-sectional research study design was used to assess the knowledge and practice regarding nasogastric tube feeding. This study was conducted at a critical care unit of Chitwan Medical College Teaching Hospital (CMCTH), Bharatpur-10, Chitwan. Critical care unit includes; (MICU) Medical Intensive Care Unit, (SICU), Surgical Intensive Care Unit, (NICU) Neuro Intensive Care Unit, (CCU) Coronary Care Unit, (HDU) Highly Dependent Unit of Medicine, HDU of Neurosurgery and Post operative ward excluding pediatric setting. Non-Probability, Enumerative sampling technique was used. Total population was 86. Population of the study was all the nurses of critical care unit of same institution who had at least 3 months of working experiences. Inclusion for this study were those nurse who had completed proficiency certificate level nursing from renowned institute and having certificate of Nepal Nursing Council examination passed and bachelor level of nursing. Research instruments was structured self administered questionnaire developed by researcher herself to assess the nurses' knowledge on nasogastric tube feeding and observational checklist to observe nurses' practice on nasogastric tube feeding. This instrument was divided in 4 parts.

Table 2: Respondents' Practice regarding Nasogastric Tube Feeding n=84.

Procedure Steps	Yes	No
	n (%)	n (%)
Check order, type amount and frequency of feeding	82(97.6)	2(2.4)
Collect all the required articles needed for nasogastric tube feeding.	83(98.8)	1(1.2)
Explain the procedure to the patient.	34(40.5)	50(59.5)
Wash hands and wear disposable gloves	69(82.1)	15(17.9)
Auscult the bowel sound before feeding	8(9.5)	76(90.5)
Check for abdominal distension, nausea, vomiting and diarrhea	36(42.9)	48(57.1)
Prepare the warm and fresh feeding	84(100)	
Keep patient in fowler's position*	80(95.2)	4(4.8)
Place a mackintosh and towel under the chin or lateral side of head.	33(39.28)	51 (60.71)
Confirm the tube placement by aspiration of gastric contents*	52(61.9)	32(38.1)

Part 1 - Questions related to socio- demographic characteristics of the nurses.

Part 2 - Question related to professional characteristic.

Part 3 – Questions related to the knowledge regarding the nasogastric tube feeding.

Part 4 - Observational checklist practice regarding nasogastric tube feeding.

The content validity of the instrument was established consulting with subject experts and research advisor. Pre-testing of the instrument was done 10% of the total sample in similar setting among nurses working in the critical care unit of College of Medical Sciences Teaching Hospital. Reliability of research instrument of knowledge was tested by item analysis and practice was tested by inter-rater reliability test.

Ethical approval was obtained from the CMC- Institutional Review Committee (IRC), Bharatpur, Chitwan. Collected data were reviewed and checked daily for its completeness, consistency and accuracy. The data were coded and entered in Statistical Package for the Social Sciences (SPSS) version 20 for analysis. Data were summarized using descriptive statistics such as frequency, percentage, standard deviation and inferential statics such as Chi-square, Pearson correlation. Chi-square test was used to determine association between demographic variables and other variable. Findings were presented in tables and interpreted accordingly.

Table 1: Respondents' Level of Knowledge n=84.

Level of Knowledge	Frequency	Percentage
Satisfactory ($\geq 75\%$)	21	25.0
Unsatisfactory ($< 75\%$)	63	75.0
Total	84	100.0

Table 1 Shows that out of 84 respondents 25% of the respondent had satisfactory level of knowledge and 75% of the respondent had unsatisfactory level of knowledge regarding NG tube feeding.

Check previous residual feeding contents before starting the feeding.	51(60.7)	33(39.3)
If the aspirated amount is more than half of the previous feeding amount, (more than 50%) withhold the feeding and inform the physician.	16(19)	68(81)
If residual contents is within normal limits, and tube is proper place return gastric contents to stomach through syringe by using gravity and flush with 30 ml of plain water	46(54.8)	38(45.2)
Pinch the proximal end of the feeding tube	83(98.8)	1(1.2)
Remove the plunger from the syringe and attach the barrel of the syringe to the N/G tube.	83(98.8)	1(1.2)
Add the feeding to the syringe barrel as prescribe amount administer the NG feed with high enough to allow it to empty.	83(98.8)	1(1.2)
Clean the tube with plain water after feeding*	82(97.6)	2(2.4)
Clamp the feeding tube after feeding.*	84(100)	
Keep patient in flower's position for 30-60 minutes	81(96.4)	3(3.6)
Observe for any complication related to NG tube feeding	29(34.5)	55(65.5)
Replace the articles after feeding	80(95.5)	4(4.8)
Remove gloves and wash hands.	75(89.3)	9(10.7)
Recording and reporting of NG tube feeding	82(97.6)	2(2.4)

*Critical steps **

Table 2 shows respondents' practice regarding NG tube feeding. Concerning critical steps, keep patient in fowler's position all of the respondents' perform correctly. Regarding confirm the tube placement by aspiration of gastric contents 61.9% of respondents

perform. Clean the tube with plain water after feeding 97.6% of respondents' perform correctly. Clamp the feeding tube after feeding all of the respondents perform correctly.

Table 3: Respondents Level of Practice n=51.

Level of practice	Frequency	Percentage
Satisfactory ($\geq 75\%$ of total score including all critical steps)	16	31.4
Unsatisfactory ($< 75\%$ of total score)	35	68.6
Total	51	100.0

Table 3 shows that out of 51 respondents who had perform correctly including all critical steps 31.4% of the respondent had satisfactory level of practice and 68.6% of the respondent had unsatisfactory practice regarding NG tube feeding.

Table 4: Association between Respondents' Level of Knowledge regarding NGT Feeding and Selected Variables n=84.

Variables	Level of Knowledge		X ² value	p-value
	Satisfactory n (%)	Unsatisfactory n (%)		
Age				
≥22	8(17.4)	38 (82.6)	3.140	0.076
<22	13(34.2)	28.5(65.8)		
Residence				
Urban	14(22.2)	49(77.8)	1.037	0.309
Rural	7(33.3)	14(66.7)		
Religion				
Hindu	18(24.3)	56(75.7)	0.000	1.000#
Non-Hindu	3(30.0)	7(70.0)		
Type of family				
Nuclear	12(17.9)	55(82.1)	7.104	0.008
Joint	9(52.9)	8(47.1)		
Professional qualification				
Proficiency certificate level (PCL)	12(23.5)	39(76.5)	0.150	0.620
Bachelor level	9(27.3)	24(72.7)		
Educational institute				
Government	4(33.3)	8(66.7)	0.130	0.719#

Private	17(23.6)	55(76.4)		
Designation				
Staff nurse	16(22.5)	55(77.5)	0.758	0.384
Senior staff nurse	5(38.5)	8(61.5)		
Total professional experience				
≤12 months	14(28.0)	36(72.0)	0.593	0.441
>12 months	7(20.6)	27(79.4)		
Working area				
ICU	19(27.9)	49(72.1)	0.926	0.336
HDU	2(12.5)	14(87.5)		
Hospital manual				
Yes	17(26.6)	47(73.4)	0.350	0.554
No	8(22.9)	27(77.1)		
In-service education				
Yes	13(26.5)	36(73.5)	0.147	0.701
No	8(22.9)	27(77.1)		
Habit of self directed learning				
Yes	16(23.2)	53(76.8)	0.243	0.622#
No	5(33.3)	10(66.70)		

Significance level at <0.05 , #continuity correction, *significance ICU-MICU, SICU, NSICU, CCU, HDU-medicine HDU, neurosurgery HDU

Table 4 shows that the level of knowledge regarding NGT feeding is statistically significant with the type of family ($p=0.008$) But there is no statistical significance between level of knowledge regarding NGT and other variables.

Table 5: Association between Respondents' Level of Practice regarding NGT Feeding and Selected Variables n=51.

Variables	Level of Practice		X ² value	p-value
	Satisfactory n (%)	Unsatisfactory n (%)		
Age				
≥22	14(30.4)	32(69.6)	6.549	0.010*
<22	3(7.9)	35(92.1)		
Residence				
Urban	13(20.6)	50(50.3)	0.000	1.000#
Rural	4(19.0)	17(81.0)		
Religion				
Hindu	14(18.9)	60(81.1)	0.159	0.690#
Non-Hindu (Buddhist, Christian)	3(30.0)	7(70.0)		
Type of family				
Nuclear	14(20.9)	53(79.1)	0.000	1.000#
Joint	3(17.6)	14(82.4)		
Professional qualification				
PCL	8(15.7)	43(84.3)	1.666	0.197
Bachelor level	9(27.3)	24(72.7)		
Educational institute				
Government	2(16.7)	10(83.3)	0.000	1.000#
Private	15(20.8)	57(79.2)		
Designation				
Staff nurse	13(18.3)	58(81.7)	0.426	0.514#
Senior staff nurse	4(3.8)	9(69.2)		
Total professional experience				
≤12 months	8(16.0)	42(84.0)	1.375	0.241
>12 months	9(26.5)	25(73.5)		
Working area				
ICU	14(20.6)	54(79.4)	0.000	1.000#
HDU	3(18.8)	13(81.2)		

In-service education				
Yes	10(20.4)	39(79.6)	0.02	0.963
No	7(20.0)	28(80.0)		
Hospital manual				
Yes	14(21.9)	50(78.1)	0.122	0.727#
No	3(15.0)	17(85.0)		
Habit of self directed learning				
Yes	15(21.7)	54(78.3)	0.144	0.704#
No	2(13.3)	13(86.7)		

Significance level at <0.05 , * significance, #continuity correction, ICU-MICU, SICU, NSICU, CCU HDU-medicine HDU, neurosurgery HDU.

Table 5 shows that the level of practice regarding NGT is statistically significant with age ($p=0.010$). But there is no statistical significance between level of practice regarding NGT feeding and other variables.

Table 6: Relationship between Knowledge and Practice of Respondents regarding NGT Feeding n=84.

Variables	Karl Pearson's Correlation Coefficient	p-value
Knowledge Practice	-0.42	0.705

Table 6 shows that there is no significant relationship between knowledge and practice regarding nasogastric tube feeding.

DISCUSSION

This study findings revealed that the percentage of satisfactory knowledge regarding nasogastric tube feeding out of 84 respondents' is only 25 whereas 75% of respondents' has unsatisfactory level of knowledge on nasogastric tube feeding. This findings is similar to the findings of Abdullah, Mohammed and Ismail (2014) which revealed that the unsatisfactory percentage of knowledge is almost 75.

This study findings reported that level of knowledge regarding nasogastric tube feeding is statistically significant with the respondents type of family ($p=0.008$). But there is no statistical significance between level of knowledge regarding nasogastric tube feeding and age, religion ethnicity, place of residence, educational institute, professional designation, professional experience, working area, in-service education, hospital protocol and habit of self-directed learning.

This study revealed that out of 84 respondents only one third of the nurses' had satisfactory level of practice whereas more than half of the respondents' 68.6% had unsatisfactory level of practice. This study findings are similar to the findings of Abdullah, Mohammed and Ismail (2014) which revealed that most of the nurses had unsatisfactory level of practices only 25% had satisfactory level of practices regarding nasogastric tube feeding who were working critical care units.

This study findings reported that level of practice regarding nasogastric tube feeding is statistically significant with the respondents age ($p=0.010$). This study finding is in contrast to the findings of Das, Patra & Pradhan (2014) which showed that there is no

statistically significant between age and level of practice. This study findings also reported that, there is no statistical significance between level of practice regarding nasogastric tube feeding and, place of residence, ethnicity, educational institute, professional designation, working area total professional experience, in-service education, hospital protocol habit of self-directed learning.

This study findings reported that there is no statistically significant correlation between nurses knowledge score and practice score regarding nasogastric tube feeding. These findings are similar to Alhawaly, Ibrahim & Qalawa (2016) which showed there is no statistically significant correlation where found between total score of knowledge and practices regarding nasogastric tube feeding. Whereas this study finding disagreement with the finding of Ahamed and Mondal (2014) which showed there is statistically significant moderately positive correlation between nurses knowledge and practice regarding nasogastric tube feeding.

CONCLUSION

Based on findings conclusion has been drawn. The study finding revealed that, only one fourth of the nurses had satisfactory level of knowledge and more than half of the nurses had unsatisfactory level of knowledge whereas more than one third of the respondents had satisfactory level of practice and more than half of the nurses had unsatisfactory level of practice regarding nasogastric tube feeding.

The study shows statistical significant association between level of knowledge and type of family. Similarly, the study shows statistical significant association between level of practice and age. The study shows that there is no statistically significant correlation between nurses' knowledge score and practice score of regarding nasogastric tube feeding.

REFERENCES

1. Abdullah, M., Mohammed, W., & Ismail, M. Nurses' Knowledge and Practices about Administration of Medications via Nasogastric Tube among Critically Ill Patients. *Journal of Education and Practice*, 2014; 5(1): 147-159. Retrieved from <http://www.medicaljournalofcairouniversity.net>.
2. Alhawaly, M. N., Ibrahim, M. H., & Qalawala, S. A. Assessment of Nurses' Knowledge and Performance regarding Feeding Patients with Nasogastric Tube in Ismailia General Hospital. *Medical Journal of Cairo University*, 2016; 84(2): 99-105. Retrieved from <http://www.medicaljournalofcairouniversity.net>.
3. Bourgault, A. M., Ipe, L., Weaver, J., Swartz, S., & O'Dea P, J. Development of Evidence-Based Guidelines and Critical Care Nurses' knowledge of enteral feeding. *Journal of National Library of Medicine*, 2007; 27(4): 17-22. 25-19. Retrieved from <http://www.Journalofnationallibraryofmedicine.com>
4. Das, S. Patra, D. & Pradhan, P. Critical Care Nurses' Knowledge & Skill regarding Enteral Nutrition in Critically Ill Patients. *Journal of Nursing Science & Practice*, 2014; 4(3). Retrieved from www.stmjournals.com.
5. Mula, C., Ncama, B., & Maluwa, A. Nurses' competency and Challenges in Enteral Feeding in the Intensive Care Unit (ICU) and High Dependency Units (HDU) of a referral hospital, Malawi. *Malawi Medical Journal*, 2014; 26(3): 55-59. Retrieved from <http://www.ncbi.nlm.nih.gov>.
6. Mula, C. A Descriptive Study of Nurses' Knowledge and Practice about Adult Enteral Nutrition in Special Care Units of a Referral Hospital in Malawi. *Malawai Medical Journal*, 2011; 21(1): 122-160. Retrieved from <http://www.malawimediojournal.org>.
7. World Health Organization, Nasogastric Tube Feeding. World Health Organization. Geneva. Retrieved from <http://www.medicinenet.com>, 2017.