

Effectiveness of Planned Teaching about Knowledge and Practice Regarding Nasogastric Tube Feeding Among Staff Nurses

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Abstract

Background: Nutrition is the science of food and has relationship to health. For every human being eating food is an enjoyment, which is the God's gift. Good nutrition means "maintaining good nutritional status that enables us to grow well and enjoy good health."¹

Objectives of this study: (i) To assess the existing knowledge & practice regarding nasogastric tube feeding among staff nurses. (ii) To evaluate the knowledge & practice regarding nasogastric tube feeding among staff nurses after planned teaching. (iii) To find out the association of knowledge and practice regarding nasogastric tube feeding among staff nurses with selected demographic variables.

Research design: Pre experimental one group pre-test, post- test research design was utilized. 60 staff nurses selected as subjects from both genders, with different ages, educational levels and years of experience was selected by convenient sampling technique for this study. Data were obtained through two main tools; structured knowledge questionnaire & observational checklist.

Results: Study results showed that there was significance difference between pre-test post-test knowledge score; pre-test mean score was 12.88 with standard deviation 3.34, whereas in post test it was 19.21 with standard deviation 3.28. In practice score there was significant difference between pre- test post-test practice score; pre-test mean score was 10.60 with standard deviation 2.06, whereas in post test it was 16.96 with standard deviation 2.16. In knowledge & practice score there was no significant association found with age, gender, total work experience only association found with educational qualification in relation to knowledge score. Study concluded that planned teaching program for nasogastric tube feeding made differences in nurse's knowledge and practices.

Keywords: Nasogastric tube; Evidence based practice; Knowledge; Staff nurses.

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Introduction

Nasogastric tube feeding also known as enteral feeding or enteral nutrition. Nasogastric intubation is defined as the passage of nasogastric tube (flexible tube made up of rubber or plastic) through one of the nostrils to the stomach. Nasogastric tube feeding is also known as enteral nutrition and it refers to the administration of nutritionally

balanced liquefied food or formula diet.²

According to United Kingdom National Patient Survey Agency (NPSA). guidance in 2005 highlighting the unreliability of certain tests to detect the placement of nasogastric tubes for example 'whoosh' test and pH testing by non-quantitative, colored litmus paper. Between 2005 and March 2011 the NPSA notified of 21 deaths and 79 cases of harm due to misplaced nasogastric tubes.³

World Health Organization, recent findings indicated that NPSA guidance is not being heeded, such as feeding despite obtain in nasogastric aspirates with pH between 6 and 8, instilling water down the tube before obtaining an aspirate, not checking tube placement or not recording written confirmation of such checks. 4 patient Safety

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representative World Health Organization, recent findings indicated that NPSA guidance is not being heeded, such as feeding despite obtaining nasogastric aspirates with pH between 6 and 8, instilling water down the tube before obtaining an aspirate, not checking tube placement or not recording written confirmation of such checks.³

Objectives

- To assess the existing knowledge regarding nasogastric tube feeding among staff nurses.
- To observe the existing practice regarding nasogastric tube feeding among staff nurses.
- To evaluate the knowledge regarding nasogastric tube feeding among staff nurses after planned teaching.
- To evaluate the practice regarding nasogastric tube feeding among staff nurses after demonstration.
- To find out the association of knowledge and practice regarding nasogastric tube feeding among staff nurses with selected demographic variables.

Operational definitions

- **Assess:** In this study, It refers to estimate the knowledge and practice of staff nurses regarding nasogastric tube feeding."
- **Effectiveness:** In this study, It refers to achieve the desired effect as expressed by gain in knowledge score and improvement in practice administration of nasogastric tube feeding".
- **Planned Teaching:** In this study, It refers to provide information regarding nasogastric tube feeding and demonstrating the nasogastric tube feeding."
- **Knowledge:** In this study, It refers to knowledge regarding nasogastric tube feeding."
- **Practice:** In this study, it refers to, "the demonstration on nasogastric tube feeding which are undertaken by the staff nurses."
- **Nasogastric tube feeding:** In this study, it refers to, "administration of feed directly into the stomach through a tube passed into the stomach through the nose (nasogastric).
- **Staff nurse:** In this study, staff nurses refers to GNM, B Sc. Nursing and PBBSc nursing qualified registered nurses working in selected hospital of the city.

Null Hypothesis

- NH 01: There is no significant difference in pre test and post test knowledge score after planned teaching regarding nasogastric tube feeding among staff nurses measured at $p < 0.05$ level of significance.
- NH 02: There is no significant difference in pre test and post test practice score after demonstration regarding nasogastric tube feeding among staff nurses measured at $p < 0.05$ level of significance.
- NH 1: There is a significant difference in the pre test and post test knowledge score after planned teaching regarding nasogastric tube feeding measured at $p < 0.05$ level of significance.
- NH 2: There is a significant difference in the pre test and post test practice score after demonstration regarding nasogastric tube feeding measured at $p < 0.05$ level of significance.

Methodology

Research approach: Quantitative approach is used.

Research design: pre experimental one group pre test post test design

Setting of the study: Dr Panjabrao Deshmukh Hospital and Reseach center, Amravati Maharashtra.

Variables

- *Independent variables:* planned teaching on knowledge and practice regarding nasogastric tube feeding
- *Dependent variables:* Knowledge and practice regarding nasogastric tube feeding among staff nurses working in selected area of hospitals of the city.

Demographic variable

It includes, age gender, professional education, area of work and year of experience

Population

- *Target population*
It includes the staff nurses working in selected area of hospital of the city.
- *Accessible population*
It comprises of staff nurses working in selected area of hospital of the city who were available at the time of data collection and who were fulfilling the inclusive criteria Sampling

- *Sample size:* 60
- *Sampling technique:* Non probability convenient sampling techniques was used.

Sampling criteria

- *Inclusive criteria:*
 1. Staff nurses working in a selected hospital and who is obtained registration from nursing council.
 2. Staff nurses who are willing to participate in the study.
 3. Staff nurses who are available during the period of data collection.

Exclusion Criteria

In this study the exclusive criteria are:-

1. Those who had attended training programme on nasogastric tube feeding.

Description of tool

Section A: Demographic data

Section B: Structured questionnaire to assess the level of knowledge related to Nasogastric tube feeding.

Section C: Consisted of observation checklist to assess the competency of practice related to Nasogastric tube feeding.

Validity

Content and construct validity of tool was determined by 11 experts including medical surgical nursing subjects experts, cardiologist and statistician etc.

Reliability

Karl Pearson correlation formula was used. The correlation coefficient 'r' of the questionnaire was 0.88, which is more than 0.8 Hence the questionnaire was found to be reliable The reliability of observational checklist was calculated by the inter rater techniques and it was found 0.87 thus, there was good agreement and the observation check scale was found to reliable.

Pilot study

Pilot study was conducted from 15th January 2018 to 22nd January 2018 for a period of 7 days. A sample of 6 staff nurses was selected from the selected area of hospital of the city. The pilot study was feasible in terms of time, money and resources.

Results

The main study data was gathered from on 29th January 2018 to 10th February 2018. Permission was obtained from concerned authority. The samples were approached in small groups on daily basis. Before giving questionnaire self introduction was given by the investigator and the purpose of the study mentioned. Consent of the sample was taken. The pretest questionnaire were distributed to the samples and collected back after 30 minutes. Practice was checked by using observational checklist. After the pretest, the investigator administered the treatment (planned teaching on nasogastric tube feeding) after 7 days post test was taken.

Section I: Description of staff nurses with regards to their demographic variables.

Table 1: Distribution of subjects in relation to their demographic variables. (n = 60)

Sr. No.	Demographic variables	Category	frequency (f)	Percentage (%)
1	Age	21-30years	32	53.33
		31-40years	21	35
		41-50years	7	11.67
		>50years	0	0
2	Educational Qualification	GNM	45	75
		Basic B. Sc. (N)	11	18.33
		Post Basic B.Sc.(N)	4	6.67
		M.Sc.(N)	0	00
3	Years of experience	< 2 years	16	26.66
		3-5years	19	31.67
		6-8years	19	31.67
		>10years	6	10
4	Area of working	Medical ward	19	31.67
		Surgical ward	15	25
		ICU	17	28.33
		Emergency/ ortho	9	15

The table 1 shows that majority 53.33 % subjects were in the age group of 21-30 years, 35% subjects belongs to age group between 31-40 years and only 11.67% subjects belongs to age group between 41-

50 years. Educational qualification reveals that 75% staff nurses were from general nursing and midwifery, 18.33% subjects were from Basic B.Sc. nursing and only 6.67% subjects were from Post Basic B.Sc. nursing. With regards to their years of experience 26.67% subjects had less than 2 years of experience, 31.67% subjects had 3-5 years of experience, 31.67% subjects had 6-8 years of experience and only 11.66% subjects had more than 10 years of experience. In relation to area of working 31.67% subjects had been working in medicine ward, 25% subjects had been working in surgery ward, 28.33% subjects had been working in ICU and only 15% subjects had been working in emergency / ortho ward.

Section II: Description on pre test and post test knowledge on practice among staff nurses regarding nasogastric tube feeding (Table 2).

Table No. 2: Description on pre test and post test knowledge grading score. (n = 60)

Level of knowledge	Pre-test Knowledge Score		Post-test Knowledge Score	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Poor	5	8.33	0	0
Average	41	68.34	9	15
Good	14	23.33	40	66.67
Very good	0	0	11	18.33

Table No 3: Comparison of practice before and after demonstration regarding nasogastric tube feeding. n = 60

Level of practice	Pre-test Practice Score		Post-test Practice Score	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Unsatisfactory	48	80	00	00
Satisfactory	12	20	52	86.66
Highly satisfactory	00	00	8	13.34

Section III: Description on the effectiveness of planned teaching on knowledge score on pre test and post test of staff nurses regarding nasogastric tube feeding (Table 3).

Table No 4: Table showing effectiveness of planned teaching on knowledge score of pre test and post test of staff nurses regarding nasogastric tube feeding. n = 60

Overall	Mean	SD	Mean Percentage	calculate 't' value	Table value	p- value
Pre test	12.88	3.34	6.33	39.87*	2	p<0.05
Post test	19.21	3.28				highly significant

Above table no 4 shows the overall mean knowledge scores of pre test and post test which reveals that post test means knowledge score was higher 19.21 with SD of ± 3.28 when compare with

pre test mean knowledge score value was which was 12.88 with SD of \pm

The calculated "t" value was 39.87 which was greater than table value 2 at 0.05 level of significance. Hence it is statistically interpreted that planned teaching on practice regarding nasogastric tube feeding was effective. Thus H_1 is accepted and H_{01} is rejected.

Table No 5: Table showing effectiveness of planned teaching on knowledge score of pre test and post test of staff nurses regarding nasogastric tube feeding. n = 60

Overall	Mean	SD	Mean Percentage	calculate 't' value	Table value	p- value
Pre test	10.60	2.06	6.36	26.56*	2	p<0.05
Post test	16.96	2.16				highly significant

Above table no 5 shows the overall mean practice scores of pre test and post test which reveals that post test means practice score 16.96 was higher with SD of ± 2.16 when compare with pre test mean practice score value was which was 10.60 with SD of ± 2.06 . The calculated "t" value was 26.56 which was greater than table value 2 at 0.05 level of significance. Hence it is statistically interpreted that planned teaching on practice regarding nasogastric tube feeding was effective. Thus H_2 is accepted and H_{02} is rejected.

Section IV: Description on association on knowledge and practice score with selected demographic variables.

The analysis shows that the area of work associated with educational qualification score while none of the other demographic variables were associated with knowledge and practice score.

Discussion

A similar study was conducted by Ahmed N (2014) in a selected hospital of Kolkata, West Bengal. With an aim to assess the knowledge and practice of staff nurses regarding nasogastric tube feeding. 42 staff nurses were selected by convenient sampling technique and data collected by using structured knowledge questionnaire and structured observational checklist. Study showed that 32 (76%) out of 42 participants had adequate knowledge where as 10 (24%) have inadequate knowledge and all participants had more than average practice level regarding nasogastric tube feeding. Study concluded that there was moderately positive correlation between knowledge and practice of staff nurses regarding nasogastric tube feeding ($r=0.46$).⁹

A similar study conducted by Huffman Pieper P, Jarczyk K, Bavne S that majority of the nurses respondents (66%) had moderate knowledge regarding nasogastric tube feeding.¹⁰

Above study reveals that knowledge of staff nurses was poor in pre test in present study also pre test knowledge score of staff nurses regarding nasogastric tube feeding was poor but after administration of planned teaching knowledge and practice score of staff nurses was increased in post test .It indicates that planned teaching was effective.

Background and need of the study

Administration of enteral feeding has long been considered the standard of care for patients not able to meet energy and protein requirements orally. Therefore, numerous hospitalized patients in the United States get Enteral Nutrition (EN). Appropriate to the latest available statistics from the National Center for Health Statistics, patients received Enteral Nutrition (EN) during nearly 251,000 hospital stays in 2012, and 78% of which were adults.⁴

A cross-sectional descriptive study was conducted on Critical Care Nurses' Knowledge and Skill regarding Enteral Nutrition in Critically Ill Patients at selected hospitals of Bhubaneswar 2013. Study showed that majority of staff nurses had above-average knowledge 44% and 44% staff nurses had below-average knowledge. Practice of staff nurses regarding enteral nutrition reveals that staff nurses were having 80% of practice skill before giving feeding, 74% of practice skill during giving feeding, and 73% of practice after giving feeding. The finding of this study will assist the staff nurses to improve the knowledge and develop the skills through attending seminars and workshops.⁵

Durgesh Nandani, Rashmi Choudhary (2017) was conducted a descriptive study to assess the knowledge and skill regarding nasogastric tube feeding staff nurses in selected hospital Punjab. 100 staff nurses were selected through convenient sampling technique. Study showed that majority of staff nurses were having average knowledge (54%) and fair practices (58%) regarding nasogastric tube feeding. Study concluded that there was a weak correlation between knowledge and skill regarding nasogastric tube feeding.⁶

Many studies have reported that, despite the importance of enteral nutrition and existing data

on evidence based nutritional guidelines; nutrition is still a significant concern in hospitals.⁷

It is therefore important to take this concept seriously, to ensure that nurses' nutritional practices for the critically ill adults are evidence based. This demonstrates that nurses have an impact on the outcome of enteral nutritional support.⁸

As nurse-patient ratio is not maintained due to lack of nursing personnel and hence there is increased work load.

Statement of the problems

Effectiveness of planned teaching about knowledge and practice regarding nasogastric tube feeding among staff nurses in selected hospital.

Delimitation

This study was limited to the staff nurses working in hospital at selected area in Maharashtra

Conceptual framework

The conceptual framework selected for this study is based general system theory by Ludwik Von Bertalanffy 1968. (A model for viewing a man as matter acting with environment.)

Review of literature

The literature reviewed has been organized into the following categories:

- Review of literature regarding nasogastric tube feeding.
- Review of literature related to knowledge and practice of staff nurses on nasogastric tube feeding.
- Review of literature regarding planned teaching.

Implications of the study

The finding of this study has implication for nursing practice, nursing education, nursing administration and nursing research.

Nursing practice

- Continue and in service education programs could be conducted for improving and updating with recent practices.
- An established evidence-based protocol for administration of nasogastric tube feeding.

Nursing education

- The student nurse can use the instrument prepared for this study for collecting information of nasogastric tube feeding.
- The finding can be utilized to prepare a guideline for administration of nasogastric tube feeding

Nursing administration

- Finding of the study can be used by the Nursing Administrator in creating policies and plans for providing education to staff nurses and health professionals.
- It would help nursing administrators to be planned and organized in giving continuing education to the nurses and other for applying and updating the knowledge regarding nasogastric tube feeding.

Nursing research

- There is need for extensive and intensive research in this area so that strategies for educating nurses regarding nasogastric tube feeding.
- This study will serve as a valuable reference material for future investigator. Limitation :
- The study was conducted only on staff nurses.
- The sample size was small to generalize the finding of the study
- The study was limited to measures the knowledge of staff nurses in selected hospitals of the city
- The tool for data collection was prepared by investigator herself . Standardize tool was not used.

Conclusion

Thus it was concluded that planned teaching programme on knowledge and practice regarding nasogastric tube feeding among staff nurses in selected hospitals of the city was found to be effective as a teaching strategy. Hence, based on the above cited findings, it was concluded undoubtedly that the written prepared material by the investigator in the form of planned teaching helped the staff nurses to increase knowledge and practice regarding nasogastric tube feeding.

Recommendations

- Similar studies may be conducted on larger population for generalization of findings.
- Comparative studies can be conducted between staff nurses of government and private hospitals
- Comparative studies can also be conducted between control group and experimental group.
- Random sampling technique can be used.
- Continued teaching programme and establishment of evidenced based guidelines in the hospital on nasogastric tube feeding can be carried out.

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