Saudi Journal of Medical and Pharmaceutical Sciences **ISSN 2413-4929 (Print)**
Scholars Middle East Publishers **ISSN 2413-4910 (Online)**
Dubai, United Arab Emirates
Website: https://saudijournals.com/

Knowledge and Practices among Nurses of Tertiary Care Hospitals, Lahore Regarding Nasogastric Tube Feeding in Adult Patients

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Original Research Article

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Article History
Received: 08.07.2018
Accepted: 15.07.2018
Published: 30.07.2018

DOI:
10.36348/sjmps.2018.v04i07.013

Abstract: Nasogastric tube feeding (NGT) is used for those patients who can-not sustain their oral requirements. Poor nursing adherence to evidence-based guidelines has negative consequences leading to higher mortality rates, delayed recovery and longer length of stay. Nurses play an intrinsic role in preventing these infections especially aspiration pneumonia by pursuing standard guidelines. Current study was designed to evaluate nurses' knowledge and practices of NGT feeding in order to reduce complications. Cross-Sectional Descriptive Study design was proposed. Study population included 70 nurses working in three public sector hospitals in Lahore. Nurse's knowledge was obtained using a self -structured questionnaire and their practices were recorded by direct observation through a checklist. Data was analyzed using SPSS 20. Data was represented in the forms of figures and tables. By knowledge and practice 60% secured under satisfactory level. Nasogastric tube feeding is a critical practice for seriously sick patients and errors in proper knowledge and skills can lead to serious complications. The present study could identify a high level of gaps in knowledge and skills of applying nasogastric tube feeding procedure. This necessitates the action at training institutions for nurses and on job protocols including monitoring for safety of patients.

Keywords: Nasogastric tube; Tertiary Care; Evidence based practice, knowledge.

INTRODUCTION

Nasogastric tube is abbreviated as NGT which is a thin, small tube that is passed through nostril, going into the throat, through the esophagus and finally into the stomach.

It is used to administer feeds and medications, perform gastric lavage and for diagnostic procedures. Proper assessment of tube size selection, tube position in the stomach, techniques of securing tube or method of feeding are vital components to reduce the hazards of NG tube related complications and to provide optimal patient safety and comfort [1].

Poor management may lead to frequent complications, like pulmonary- aspiration (pneumonia and apnea), intolerance of feed (high residual volumes, regurgitation, vomiting and diarrhea), mechanical blockage and accidental respiratory location. According to Xu, Ren (2), the occurrence rate of pulmonary aspiration during NG feeding is 77%, the intolerance of feeding up to 63% and mechanical blockage up to 14% Xu, Ren, Shi, and Jiang [2]. Respiratory aspiration is a chief source of grim sickness and death among the inhabitants of nursing homes as well as hospitalized patients Marik [3]. Incidence of diarrhea in tube feed patients ranges from less than 5% and greater than 60% Beyer, Matarese, and Gottschlich [4].

A descriptive survey was conducted in Kolkata to evaluate the nurses for knowledge and practice regarding NG tube feeding and it was observed that the hospital was not having any written instructions regarding tube feeding for the patients. Therefore, the investigator suggested for continued teaching program and construction of evidenced based guidelines in the hospital on NG tube feeding Ahamed and Mondal [5].

Mula, Ncama, and Maluwa [6] examined nurses' knowledge and practice about adult enteral nutrition conducted in Malawi. The findings revealed that there were gaps in nurses' knowledge and practice. Environmental facets such as feed shortage, lack of strategies and patients refusal of tube feeding were reported as communal problems in nurses' practice. Recommendations contain education, evidence based procedures and extra monitoring to improve tube feeding practices. In a study conducted by Sobani, Ghaffar, and Ahmed [7] in Pakistan, it was highlighted that patients who had healthier nutritive status suffered less complications and better survival rate.

Consequently, enteral nutritional care plays an imperative part in their management.

Registered nurses are responsible for the safe application of nasogastric tube feeding, examining the patency of the NG tube and management of recommended feeds and medication as per the suggested regime for patients on external nutrition.

MATERIALS AND METHODS

A descriptive observational study was conducted at three public tertiary care hospitals of Lahore: Shaikh Zayad Hospital, Lahore General Hospital and Jinnah Hospital by observing the registered Nurses caring for the adult patients receiving nasogastric tube feeding. The study duration was 12 months after the approval of the synopsis. An informed written consent was first obtained from all the selected participants. A questionnaire was distributed among the selected participants with brief explanation to all the relevant responses. Incomplete responses and selecting multiple options for the same question were considered incorrect and were dropped out. The data was continuously collected until the investigator got the required sample.

A total of 70 completed questionnaires were evaluated. Among the total 50 items, 20 were based on knowledge and 30 observational coded checklists. Practices of nurses were checked through a structured checklist. There were two indicators of checking the nurses' performance. During coding, suitable were given 1 and unsuitable were labeled 0.Descriptive and inferential statistics were used for data analysis.

Data collected was entered into SPSS version 20 for storage and analysis. After analysis data was presented in the form of figures, tables, frequencies and percentages.

RESULTS

A large number of the participants (48.6%) had poor level of knowledge and only (10%) had adequate level of knowledge (Table-II).However majority of the studied sample (74.3%) had inadequate level of skills (Table-III). There was a positive strong association between knowledge and practice, as those who had adequate knowledge had adequate skills (100%).

Table-1: Frequency Distribution of Participants According Demographics

Variable		Frequency	Percentage
Gender	Female	70	100.0
Age	21-30 years	43	61.4
	31-40years	16	22.9
	41-46years	11	15.7
Working experience	1-5years	30	42.8
	5-10years	24	34.3
	10-15years	4	5.7
	15+years	12	17.1
The Protocol for applying NG tube	Available	58	82.9
	Not available	12	17.1

Table-2: Frequency distribution of participants according to their Total knowledge of NG tube feeding

Variable		Frequency	Percentage
Knowledge of NG tube feeding	Poor	34	48.6
	Average	29	41.4
	Adequate	7	10.0
Performance	Inadequate skill	52	74.3
	Adequate skill	18	25.7

Table-3: Association between Knowledge and Practice

Variable	Knowledge	Performance Inadequate skill	Adequate skill	Total	p-value
Knowledge of NG tube feeding	Poor	32 94.1%	2 5.9%	34 100.0%	< 0.001*
	Average	20 69.0%	9 31.0%	29 100.0%	
	Adequate	0 0.0%	7 100.0%	7 100.0%	
	Total	52 74.3%	18 25.7%	70 100.0%	

*Significant at 0.05 level of significance (n=70)

DISCUSSION

The findings of the current study showed a very low-level knowledge among nurses regarding nasogastric tube feeding. The study results revealed that very few participants (10%) had adequate level of knowledge. Only 26 (37.1%) reported that all methods like bolus, intermittent, continuous administration are used in gastric feeding. Only 3(4.3%) of the total respondents stated that the reliable bedside method to confirm NGT placement is pH of gastric aspirate. A few participants 18(25.7%) identified that the color of normal gastric secretion is grassy green, off white or off tan color. The rest of them that is 40(57.1%) knew that tube patency is maintained by flushing tube with 30-50ml of water. These findings were in agreement to Mahmoud A Shahin, Mohamed, and Sayed [8] who showed that nurses had lack of knowledge and some unsafe practices regarding enteral feeding in the critical care department.

Nurses' practices complying with evidence based guidelines about nasogastric tube feeding have decisive impact on averting most of the complications of the patients. The present study elucidated that only a few nurses had adequate level of performance. With regard to practice, it was found that more than half (56%) of the respondent nurses did not wash hands before feeding and (95.7%) even after feeding. In contrast, majority (69%) flushed tube with 10-30 ml water. Regarding oral and nasal hygiene, it was found that only (7%) of nurses performed mouth and nasal care. Concerning patient position, it was observed that 50 (71.4%) of the participant nurses kept the patients in the semi fowler position during feeding. But on the other side 29(41.4%) nurses kept patient in the semi fowler position for 30 minutes after feeding to prevent patients from aspiration whereas, 41(58.6%) kept record of relevant information after feeding the patients. Mula *et al*., [6] found that majority of the respondents were having poor practices specially checking the nasal patency, gastric residual volume and documentation, because all nurses involved in tube feeding had not received in-service training on tube feeding.

The present study illustrated that nurses who had poor knowledge had poor performance while those who had adequate knowledge had adequate skills related to NG feeding. The findings of this study are in line with that of Mahmoud Abdulhameed Shahin [8] who found strong positive association between nurses' knowledge and practices scores and it mentioned that knowledge was important for safe nursing practices. In addition Abdullah, Mohammed, and Ismail [9] also found that all nurses were having an unsatisfactory level of knowledge and practices. Mowe *et al.*, [10] reported that those who had good knowledge also had a better practice of enteral nutrition. Plauth *et al*., [11] concluded that efforts must be made to update nurses' skills and knowledge by organizing refresher courses for more accurate Standard Operation Procedure (S.O.P) on nasogastric tube feeding. Participation in research will also enhance nurses' competency.

The number of years of practice of participants were almost equal (43:57years) in terms of up to 5 years and more than 5 years, but this did not show any significant effect on both knowledge and practice. Majority (61.42%) of the respondents was under 30 years of age and this also did not correlate with any significant outcomes of knowledge and skills.

CONCLUSION AND RECOMMENDATIONS

- Nurses at three tertiary care hospitals in Lahore have striking gaps and alarming skill performance related NG tube feeding.
- The quality of care for patients requiring NG tube feeding can be assessed grossly as inefficient and endangered for the patients.
- Although the study included only 3 large hospitals, it could be generalized that the knowledge and skills of nurses in general is quite poor with regard to NG tube feeding.
- This calls for interventions and multiple stages of class room teaching, patient practices, protocol development, on job monitoring and continued updating of the nurses capacities.

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