

Critical care nurses' knowledge about enteral tube feeding at public sector hospital, Lahore

Mehdi Hayat Khan¹, Zubaida Akhtar¹, Asifa Shahzadi², Saba Naz³, Basran Bibi⁴

Khan HM, Akhtar Z, Shahzadi A, et al. Critical care nurses' knowledge about enteral tube feeding at public sector hospital, Lahore. *J Health Pol Manage.* 2022;5(2): 11-13.

ABSTRACT

INTRODUCTION: This study aim was to assess critical care nurses' knowledge about Enteral Tube Feeding at public sector hospital, Lahore.

MATERIAL AND METHODS: A descriptive cross-sectional study design was used to assess the critical care nurses' knowledge about enteral feeding at Faisalabad Institute of Cardiology, Lahore. Stratified sampling was utilized to select the participants from the list of the ICU nurses. List was obtained from the Hospital and out of 271, 54 nurses were selected in this study. A structured questionnaire sheet was used to assess nurses' knowledge about enteral tube feeding.

RESULTS: That majority of critical care nurses had overall moderate level of knowledge about enteral tube feeding. There was a significant association

between the level of education and sources of knowledge about enteral tube feeding. More than half of the critical care nurses had a three-year nursing diploma and five years or less of work experience, either as general nurses or as critical care unit nurses.

DISCUSSION: The results of the current study have revealed that the age of the majority of the critical care nurses' was 20 years old and above. This result indicate that most participants were fresh graduates who were assigned together to work in ICUs.

CONCLUSION: The study concluded that, the majority of the critical care nurses had adequate level of knowledge about enteral feeding.

RECOMMENDATION: The study recommended that, Implementation of training program for nurses regarding enteral feeding. Continuous monitoring and teaching on spot from nurse supervisor are needed to ensure quality of care provided by nurses for enteral feeding.

Key Words: Critical care nurses; Nurses' knowledge; Enteral tube feeding

INTRODUCTION

Enteral tube feeding is a proper therapeutic strategy, which used in the management of complicated patients. The traditional nasogastric tube was used in the intestinal feeding among number of the patients who requires immediate stomach lavage. Health care providers are responsible to manage the enteral tube feeding [1]. Therefore, they have to develop their knowledge and skills in order to avoid patient related complications. Over recent years, the Enteral Tube Feeding (ETF) techniques are developed to deliver safe, comfortable and efficient practice to provide nutritional support to the admitted patients [2].

The methods were recommended as bedside test to check the placement of the enteral tube. Like; Aspiration of gastric contents, auscultation of insufflated air, measurement of Ph. of gastrointestinal secretions. In addition, observing for coughing and choking, inability to speak or appearance of air bubbles from the end of the tube. The care giver should assess the presence of gastric residuals by aspirating stomach contents through the feeding tube.

If the administration of medications by oral route is difficult, then the health care providers should think about enteral routes. The common problem of nasogastric administration is drug-food interruption which leads to patient discomfort or blockage of tube sometimes [3]. This challenge makes improvement in the knowledge and practices related to gastric feeding to maintain patient safety [4].

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. Respiratory aspiration is a chief source of grim sickness and death among the inhabitants of nursing homes as well as hospitalized patients. Registered nurses are responsible for the safe application of enteral tube feeding, examining the patency of the tube and management of recommended feeds and medication as per the suggested regime for patients on external nutrition [3].

What is the level of critical care nurses' knowledge about enteral feeding

at the private hospital, Lahore?

MATERIAL AND METHODS

The objective of study was to evaluate the critical care nurses' knowledge about enteral feeding at the Public Sector Hospital, Lahore.

Study design

A descriptive cross-sectional study design was used to assess the critical care nurses' knowledge about enteral feeding at Faisalabad Institute of Cardiology Hospital, Lahore.

Study setting

The study was conducted from January to March 2021 in Intensive Care Unit (ICU) at Faisalabad Institute of Cardiology, Lahore. This hospital was selected as it was the referral hospitals for most patient and the service fees were low.

Sampling method

Stratified sampling was utilized to select the participants from the above-mentioned public hospitals. A list of the nurses' name was obtained from the hospital. The required sample was drawn randomly from the list using a systematic random technique. All nurses who had at least 6 months working experience, including both males and females with different educational qualifications, who were involved directly in ICU patients care, full-time employees and had agreed to participate were eligible to take part in this study. Nurses who included in the pilot study and those who were unwilling to participate were excluded. Based on these criteria, the eligible participants were approached by the researchers at their workplace. Out of 271 nurses, 54 were included in this study.

Study instrument

Based on a comprehensive review of the previous related studies, a self-administered questionnaire was developed by the researchers. The questionnaire consists of 17 questions with four possible options to be answered.

¹College of Nursing, Shalamar Hospital, Lahore, Pakistan; ²Saida Waheed FMH College of Nursing, Lahore, Pakistan; ³Bahawalpur Victoria Hospital, Bahawalpur, Pakistan; ⁴THQ Hospital Chak Jhumra, Faisalabad, Pakistan

Correspondence: Mehdi Hayat Khan, College of Nursing, Shalamar Hospital, Lahore, Pakistan, Tell: +923007506534; E-mail mehdisnc05@gmail.com
Received: 09-Mar-2022, Manuscript No. PULHPM-22-4440; Editor assigned: 11-Mar-2022, PreQC No. PULHPM-22-4440(PQ); Reviewed: 22-Mar-2022, QC No. PULHPM-22-4440(Q); Revised: 23-Mar-2022, Manuscript No. PULHPM-22-4440(R); Published: 28-Mar-2022, DOI: 10.37532/pulhpm.22.5(2).11-13



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The first section is related to the socio-demographic characteristics of the participants: age, sex, level of education, working experience as a nurse, working experience as critical care nurses, training courses on enteral feeding and sources of knowledge about enteral feeding.

The second section is related to critical care nurses' knowledge regarding enteral feeding and is divided into three subsections:

- Critical care nurses' knowledge about before enteral tube feeding which includes eight questions with a total of 32 responses.
- Critical care nurses' knowledge about during enteral tube feeding which includes eight questions with a total of 32 responses.
- Critical care nurses' knowledge about after enteral tube feeding which includes eight questions with a total of 32 responses.

Scoring system

The 17 questions related to knowledge were assessed with "Yes" and "No" options. After correction of some reverse statements, a score of 1 was given for each correct response, while a score of 0 was given for each "incorrect" response. The maximum score for all correct answers was 68. Correct answers were calculated to obtain total scores for all questions of the three subsections. A score of 50% or less was considered inadequate, 51%-75% moderate, while 76% and above was considered as adequate.

Validity and reliability

Five experts in the enteral tube feeding from hospital were invited to participate in examining the content validity for the instrument used in this study. Their comments concerning the tool accuracy, relevance, consistency, comprehensiveness and applicability for implementation were taken in consideration. A pilot study was conducted on 40 critical care nurses. Cronbach's alpha test was performed to examine the reliability of the questionnaire items. The result of the alpha was 0.78, which is acceptable [5].

Data collection and analysis

A self-administered questionnaire was distributed during the period of January to March 2020. Critical care nurses were invited to fill the questionnaire. Out of 60 questionnaires distributed, 54 were completed correctly and included in the final analysis.

The participants' responses were entered, cleaned, checked and explored using statistical software (IBMSPSS), version 24. The analyzed data was described using the mean values and standard deviations for continuous variables as well as the frequency and percentages for the categorical variables. A multinomial logistic regression and Chi-square tests were conducted to find out the associations between the critical care nurses' knowledge and the selected socio-demographic variables. A p-value of ≤ 0.05 was reported as statistically significant.

RESULTS

Concerning the level of critical care nurses' knowledge on enteral tube feeding, the results of the current study showed that the most (46.0%) of the participants had an overall inadequate level of knowledge and only (10.9%) had an overall adequate level of knowledge, while (43.1%) had an overall moderate level of knowledge regarding the enteral tube feeding.

The current results indicated that there was a significant association between the level of education and sources of knowledge about enteral tube feeding and the overall level of participants' knowledge of enteral tube feeding ($p=0.011$ and $p=0.030$, respectively). However, there were no significant associations between the participants' age, sex, experience as nurses, experience as critical care nurses and training courses and the overall level of knowledge regarding enteral tube feeding ($p=0.276$, 0.626 , 0.425 , 0.204 and 0.714 , respectively). The detailed results of the association are presented in Table 1.

TABLE 1

Association between the critical care nurses' characteristics and their level of knowledge about enteral tube feeding.

Socio-demographic characteristics	Knowledge level			p-value
	Adequate	Moderate	Inadequate	
Age (years)				
20-25 years	7 (8.3)	37 (43.5)	41 (48.2)	
26-30 years	6 (10.0)	24 (40.0)	30 (50.0)	

31-35 years	5 (25.0)	8 (40.0)	7 (35.0)	0.276
≥ 36 years	1 (11.1)	6 (66.1)	2 (22.2)	
Sex				
Male	6 (8.8)	32 (47.1)	30 (44.1)	0.626
Female	13 (12.3)	43 (40.6)	50 (47.2)	
Level of education				
Diploma	8 (7.0)	57 (49.6)	50 (43.5)	0.011
Bachelor	9 (16.4)	17 (30.9)	29 (52.7)	
Master	2 (50.0)	1 (25.0)	1 (25.0)	
Working experience as a nurse (years)				
1-5	12 (8.7)	59 (42.8)	67 (48.6)	0.425
6-10	6 (18.8)	15 (46.9)	11 (34.4)	
> 10	1 (5.3)	8 (42.1)	10 (52.6)	
Training courses on enteral tube feeding				
Yes	8 (11.3)	28 (39.4)	35 (49.3)	0.714
No	11 (10.7)	47 (45.6)	45 (43.7)	
Sources of knowledge about enteral tube feeding				
College or Institute of Nursing	11 (9.6)	56 (49.1)	47 (41.2)	0.030
Consulting colleagues	6 (26.1)	8 (34.8)	9 (39.1)	
In-service training courses	2 (8.3)	8 (33.3)	14 (58.3)	
Others	0 (0.0)	3 (23.1)	10 (76.7)	

DISCUSSION

The results of the current study have revealed that the age of the majority of the critical care nurses' was 20 years old and above. This result indicate that most participants were fresh graduates who were assigned together to work in ICUs. This finding is consistent with the result of a previous study which reported that over half of participants' age ranged between 26 and 35 years old [6]. However, our result is inconsistent with the result of another study which revealed that the majority of nurses' age was 35 years old and above. Furthermore, the results showed that the majority (60.9%) of the ICU nurses were female. The high proportion of female nurses could be related to the fact that the profession of nursing remains a female-dominant profession. This finding is similar to a previous study that showed the majority (75%) of the participants were female nurses.

The current study revealed that more than half of the critical care nurses had a three-year nursing diploma and five years or less of work experience, either as general nurses or as critical care unit nurses. This could be because studying nursing education is more accessible in many nursing institutes all over Pakistan, while there are a limited number of nursing colleges that have opened in the last few years. This finding is nearly in line with a previous study that reported most nurses had a diploma with one to four years of working experience. The results also revealed that 59.20% of critical care nurses had never taken any previous training courses on enteral tube feeding and 61.5% of them specified colleges and nursing institutes as the main sources of knowledge about the enteral tube feeding for them. However, our results contradict the results, who found that in-service training courses (24.9%) was the most frequent source for knowledge, followed by colleges or schools of nursing education (20.6%) [7].

The key finding in the current study was that the critical care nurses exhibited an inadequate level of knowledge concerning enteral tube feeding. However, only 10.90% of the ICU nurses had an overall adequate level of knowledge regarding the enteral tube feeding as a whole and the levels of adequate knowledge of it before administration, during administration and after administration were (16.10%, 5.80% and 9.20%, respectively).

Such an inadequate knowledge among most Pakistani ICU nurses might be due to the inadequacy of in-service refreshing training courses or because hospitals have not a clear and updated guideline protocol that ICU nurses can access and adhere to at work. As mentioned above, 59.20% of ICU nurses had never engaged in training courses about enteral tube feeding, and most had a three year nursing diploma and had five-years working experience or less, which supports our speculation. Our findings highlighted the gap in ICU nurses' knowledge regarding the enteral tube feeding, which indicates the necessity for conducting in-service training courses.

The current study has some limitations that should be addressed in

future research. The study was exclusive to assessment of nurses' knowledge in ICUs at public hospitals in Faisalabad Institute of Cardiology. Thus, the findings should be dealt with caution. Besides, future studies should evaluate nurses' knowledge in different hospitals and settings.

CONCLUSION

The present study revealed that ICU nurses working at public sector hospital had moderate level of knowledge regarding enteral feeding. There is dire need to improve their knowledge.

RECOMMENDATION

- Implementation of training program for nurses regarding enteral feeding.
- Upgrading nurse's knowledge through continuous education program and orientation program about enteral feeding.
- Continuous monitoring and teaching on spot form nurse supervisor is needed to ensure quality of care provided by nurses for enteral feeding.
- Further studies should be conducted to improve nurses' knowledge regarding enteral feeding.

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