Assessment of Nurses' knowledge about Enteral Feeding at Critical Care Units in Hospitals of Al-Anbar Governorate

تقييم معارف الممرضين حول التغذية المعوية في وحدات الرعاية الحرجة في مستشفيات محافظة الانبار

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المستخلص

الاهداف: تهدف الدراسة إلى تقييم معارف الممرضات حول التغذية المعوية في وحدات الرعاية الحرجة.

منهجية البحث: تم تنفيذ تصميم دراسة وصفية في وحدات العناية المركزة بمستشفى الرمادي التعليمي ومستشفى الفلوجة التعليمي بمحافظة الأنبار للفترة من 6 ديسمبر 2020 إلى 5 يناير 2021.تم اختيار عينة غير احتمالية (عينة هادفة) تتكون من 32 ممرضة بناء على معايير الدراسة. تتكون الأداة من موثوقية الأداة = 0.87.

تتكون الأداة من 30 فقرة عن المعرفة حول التغذية المعوية : الجزء الأول يضم الخصائص الاجتماعية والديموغرافية لعينة الدراسة مثل العمر والجنس ومستوى التعليم وسنوات الخبرة في مجال التمريض وسنوات الخبرة في وحدة الرعاية الحرجة والتدريب دورة حول التغذية المعوية ، الجزء الثاني عبارة عن ورقة استبيان لتقييم معرفة الممرضات حول الرعاية المقدمة للمرضى الذين يخضعون للتغذية المعويةتم استخدام مناهج التحليل الإحصائي الوصفي والاستنتاجي لتحليل البيانات.

تم استخدام استبيان كأداة لجمع البيانات وتكونت من جزئين: الجزء الأول الخصائص الديموغرافية لعينة الدراسة (العمر، الجنس ،مستوى التعليم، سنوات الخبرة في التمريض، سنوات الخبرة في وحدات الرعاية الحرجة و المشاركة في دورات تدريبية تتعلق بالتغذية المعوية) ، والجزء الثاني عبارة عن استبيان لتقييم معارف الممرضين حول الرعاية المقدمة للمرضى الذين يخضعون للتغذية المعوية والتي تتكون من (30) فقرة.

النتائج: أشارت نتائج الدراسة إلى أن معظم الممرضات كان لديهن مستوى معقول من المعرفة حول التغذية المعوية.

الاستنتاجات: خلصت الدراسة إلى أن معظم ممرضات الرعاية الحرجة لم يكن لديهم معرفة جيدة بالتغذية المعوية وهذا يمكن أن يؤدي إلى عدم كفاية تناول السعرات الحرارية في المرضى المصابين بأمراض خطيرة.

التوصيات: توصي الدراسة بتطوير وتحسين معارف الممرضين حول الطريقة الصحيحة للتغذية المعوية من خلال تطوير برامج تعليمية والمشاركة في البرامج التدريبية حول الاعطاء الآمن للتغذية المعوية.

الكلمات المفتاحية: التقييم، معارف الملاك التمريضي، التغذية المعوية، وحدات العناية الحرجة.

Abstract

Objectives of the study: The present study aims to evaluate nurses' knowledge about enteral feeding in critical care units.

Methodology

A descriptive study design was carried out in the critical care units at Al-Ramadi Teaching Hospital and Al-Fallujah Teaching Hospital of Al-Anbar Governorate for the period 6th of December 2020 to 5th of January 2021. A non-probability (purposive sample) consists of 32 nurses was selected based on the study criteria. The instrument consist of, the reliability of instrument was = 0.87.

The instrument consist of 30 items of knowledge about enteral feeding, the first part, included the study sample's socio-demographic characteristics of age, gender, level of education, years of experience in nursing field, years of experience in critical care unit, and training course on enteral feeding, second part is a questionnaire to assess nurses' knowledge about care provided to patients undergoing enteral feeding.

Descriptive and inferential statistical analysis approaches were used for data analysis.

Results: The findings of the study indicated that most of the nurses had fair level of knowledge about enteral feeding.

Conclusions: The study concluded that most of critical care nurses did not have a good knowledge about enteral feeding and this can lead to inadequacy of calorie intake in critically ill patients.

Recommendations: The study recommends developing and improving the nurses' knowledge about the correct method of enteral feeding through education program and participation in training course programs about safe administration of enteral feeding.

Key words: Assessment, Nurses knowledge, Enteral Feeding, Critical Care Units.

Introduction

Critically ill patients are patients with serious, life-threatening conditions with severe consequences, including malnutrition. It is usually associated with increased metabolism and lean body weight reduction which leads to malnutrition [(1)]. Therefore, Nutrition is one of the most important concepts in the treatment of many diseases because it directly affects the physiological changes and critical consequences of the disease. Most patients including critical care patients fail to take the required nutrition like normal people [(2)].

For critically ill patients, regular enteral feeding is a key intervention in meeting their nutritional and physiological needs [(3)]. Enteral feeding is one of the most efficient nutritional methods in intensive care. In addition to its cost effectiveness, it has become more popular with other methods of nutrition in the promotion of patient immunity and survival [(4)]. Enteral feeding of critically ill patients has become a standard of care in ICUs. Early initiation of enteral feeding is recommended in international guidelines as early nutrition associated with decreased mortality, improves clinical outcomes, reduces gastric intolerance and promotes early reestablishment of gastroduodenal motility [(5)].

Nutritional therapy is an important part of treating critically ill patients because it allows the administration of energy and nutrients and reduces the incidence of malnutrition. In addition, nutritional therapy plays an essential role in pathophysiological changes and clinical outcomes of disease [(6)].

Enteral nutrition should be managed by an experienced multidisciplinary team in order to ensure patient safety and quality of life. Members of the nutrition team must have up-to-date knowledge and skills to monitor and evaluate patients during the enteral feeding process and prevent the development of complications. The nurse, as a member of the team, has important responsibilities, such as correct and safe enteral feeding practices, caring for the enteral feeding route, and following up of patients as directed [(7)]. Therefore, nurses should have adequate knowledge and practice for caring patients undergoing enteral feeding [(8)].

Methodology

A descriptive study design was carried out in the critical care units at Al-Ramadi Teaching Hospital and Al-Fallujah Teaching Hospital of Al-Anbar Governorate from the period 6th of December 2020 to 5th of January 2021, in order to evaluate the nurses' knowledge concerning enteral feeding on in critical care units.

A purposive sample consists of (32) nurses working in critical care units was selected according to study criteria and after obtains consent permission from them.

The study instrument was consisted from two parts: First part, included the study sample's socio-demographic characteristics (age, gender, level of education, years of experience in nursing, years of experience in critical care unit, time working and training course about enteral feeding). Second part focused on the nurses' knowledge regarding enteral feeding which are questionnaire sheet to assess nurses knowledge

about care provided to patients undergoing enteral feeding which consist of (30) items.

The IBM Statistical Package of Social Sciences (SPSS) Version 22 was used to analyze the results. Both descriptive statistical analysis and inferential statistical analysis approaches were used in order to investigate the relationships between variables.

Results

Table (1): Distribution of the Study Sample by their Socio-demographic Characteristics (n=32).

Variables	Classification	Frequency (F)	Percentage (%)
Age/ years	20-30 years	20	62.8
	31-40 years	9	27.9
	41-50 years	2	6.2
	51-60 years	1	3.1
Mean ± SD		31.5313 ± 6.92347	
Gender	Male	26	81.4
	Female	6	18.6
	Total	32	100
Level of Education	Nursing School	6	18.6
	Nursing Institute	24	75.2
	College of Nursing	2	6.2
Years of Experience in nursing	1-5 years	16	50.4
	6-10 years	10	31
	11-15 years	4	12.4
	16-20 years	1	3.1
	31-35 years	1	3.1
Mean ± SD		1.9375 ± 1.24272	
Years of Experience in Critical Care Unit	1-5 years	25	78.3
	6-10 years	6	18.6
	11-15 years	1	3.1
Mean ± SD		1.1563±.44789	
Time Working	Morning Shift	19	59.4
	Night Shift	13	40.6
Training course about Enteral Feeding	Yes	-	-
	No	32	100

F=Frequency; %=Percentage.

Table (1) shows that the high percent (81.4%) of nurses were males at age group (20-30) years old which of (62.8%), high percent of them (75.2%) was graduated from nursing institute, (50.4%) of them have (1-5) years of experiences, (78.3%) of them have experiences in critical care units, and 100% of the nurses not participant in a training courses related to enteral feeding.

Table (2): Assessment of Nurses Knowledge about Enteral Feeding (n=32)

NO.	Items of Enteral Feeding Knowledge	know		Not know	
		Freq.	%	Freq.	%
1	Enteral feeding is	8	25.0	24	75.0
2	Assessing a patient's nutritional status before enteral feeding	18	56.2	14	43.8
3	Indications for use of enteral feeding include	10	31.2	22	68.8
4	An output of the enteral feeding protocol application is	24	75.0	8	25.0
5	The patient's nutritional formula must be included	12	37.5	20	62.5
6	Methods of administering enteral feeding include	24	75.0	8	25.0
7	Documentation in the patient's nutritional prescription	5	15.6	27	84.4
8	A short-term feeding tube is placed for patients who require enteral nutrition for period up to	26	81.2	6	18.8
9	Safe methods of placement enteral tube feeding	30	93.8	2	6.2
10	Document the important elements	16	50.0	16	50.0
11	One of the basic principles before enteral feeding is	21	65.6	11	34.4
12	Stop enteral feeding in special cases	28	87.5	4	12.5
13	Prevent contamination during enteral feeding	9	28.1	23	71.9
14	Opened formula and supplements with sterile technique	21	65.6	11	34.4
15	Accurate way to measure the amount of enteral feeding formula	12	37.5	20	62.5
16	Flush the enteral feeding tube	12	37.5	20	62.5
17	Nutritional formula	10	31.2	22	68.8
18	Medication via enteral feeding tube	22	68.8	10	31.2
19	How medications are given through an enteral feeding tube	16	50.0	16	50.0
20	Flush the feeding tube before giving the medication with	22	68.8	10	31.2
21	Causes of feeding tube plugged	19	59.4	13	40.6
22	Best practices for maintaining tube patency	16	50.0	16	50.0
23	During continuous enteral feeding, the feeding tube is flush with (30-60 ml)	20	62.5	12	37.5
24	During intermittent and bolus enteral feeding, feeding tubes are flushed before and after each feeding with	13	40.6	19	59.4
25	Opened formula or ready-made enteral feeding solutions	24	75.0	8	25.0
26	Best way to open a blocked enteral feeding tube	21	65.6	11	34.4
27	The appropriate position for the patient while administer enteral feeding	8	25.0	24	75.0
28	The best way to switch a patient from enteral to oral feeding	22	68.8	10	31.2
29	Essential elements in monitoring a patient receiving enteral feeding	18	56.2	14	43.8
30	Monitoring and documented essential elements by nurses.	1	3.1	31	96.9
Total			**52.91**		**47.09**

Freq.= frequency, % = percentage.

Table (2) shows that the practical knowledge of nurses related to mechanism of enteral feeding (52.91%) was incorrect answer, while the correct of total practical knowledge of them was (47.09%).

Table (3): Relationship between nurses knowledge and nurses level of education, year of experiences in nursing, experiences in critical care unit and time of working

Variable	Mean	S.D.	t	df	Sig. P
Level of education	-52.09375	9.31305	-31.642	31	.000
Years of Experience in nursing	-52.03125	9.27182	-31.745	31	.000
Years of Experience in Critical Care Unit	-52.81250	9.24379	-32.319	31	.000
Time Working	-52.37500	9.36965	-31.621	31	.000

T. = t-test, df. = Degree of freedom, Sd.= Standard Deviation , S. =Significance at P<0.05.

Table (3), the findings show that there are highly significant differences between the nurses knowledge and their level of education, year of experiences in nursing, years of experience in critical care unit, and time of working at P≤0.05 level.

Discussion

Part-I: Discussion of the Study Sample by their Sociodemographic Characteristics, as Shown in Table (1):

Regarding the sociodemographic characteristics of the studied nurses, the present study revealed that the majority of the nurses in the present study were male (81.4%) and (18.6%) was female at age group (20-30) years with a mean ± SD of the age (31.5313 ± 6.92347) years and (59.4%) of them working at night shift. The majority of the nurses (75.2%) were graduated from nursing institution. The present study indicated that most nurses (50.4%) have (1-5) years of experiences in nursing field with a mean ± SD (1.9375 ± 1.24272) and (78.3%) of them had (1-5) years of experiences in the critical care units. In terms of participation in enteral feeding training courses, (100%) of nurses in the current study had no participation in training courses.

This socio-demographic data of the study participants consistent with the study which conducted at International Hospital Kampala/Uganda, the participants in the study was (62.5%) at age group (20-30) years old [(9)]. Another study that was done in Yemeni capital to assess the level of 174 nurses knowledge in ICU regarding the administration of enteral feeding, showed that more than half of the ICU nurses had a diploma in nursing and five years or less of work experience in nursing [(3)]. As well as, a study conducted to assess the effect of educational nursing guidance on nurses' knowledge and practices related to enteral feeding in critical care units among 55 nurses in Benha University Hospital, they stated that more than two-thirds of nurses had 1 to less than 5 years of experience in ICU [(5)].

Part-II: Discussion of Assessment of Nursing Knowledge Regarding Enteral feeding administration, as Shown in Tables (2):

According to findings of the present study, the nurses knowledge about enteral feeding did (52.91%) not know answers, while the know answers of total knowledge of them was (47.09%) this indicate that the total knowledge of nurses about enteral feeding was fair. This result comes along with the result of the study to evaluate the effectiveness of safety measures of enteral feeding for comatose patients on 60 nurses in the intensive care units of Benha University and Zagazig Hospitals, they revealed that more than three-quarters of the nurses (88.3%) had unsatisfactory level of knowledge before the intervention guideline. However, after the intervention, two-thirds of the nurses (75%) had a good level of knowledge [(10)]. Similarly, a study conducted to assess the knowledge and practice of critical care regarding medication administration through nasogastric tube, shows that an unsatisfactory level of knowledge among nurses was found [(11)].

Part-III: Discussion the Relationship between the Nurses Knowledge and their sociodemographic characteristics, as Shown in Table (3):

The results of present study revealed that there were highly significant relation between the nurses knowledge and their demographic characteristics regarding the level of education, years of experience in nursing, years of experience in critical care unit and time working of the study sample at $p<0.001$. This result agrees with the findings of the study conducted on 50 nurses, the results revealed that there is a statistical significant relation between nurses' knowledge and their level of education [(12)]. As

well as, another study reported that there was statistically significant relationship between nurses' knowledge and demographic characteristics regarding their level of educational and training courses about nasogastric tube care [10]. Contradiction to these study findings a study conducted on 60 nurses to assess nurses performance in providing nutritional support for mechanically ventilated patient , the study revealed that there was no statistical significant relation between nurses knowledge regarding nutritional support and their demographic characteristics [13].

Conclusions

The study concluded that most of critical care nurses did not have a good knowledge about enteral feeding and this can lead to inadequacy of calorie intake in critically ill patients.

Recommendations

• The study recommends to develop and improve the nurses' knowledge about the correct method of enteral feeding through education program and participation in training course programs about safe administration of enteral feeding.

• Establishing a written update protocol regarding enteral feeding to ensure sufficient and safe nurses knowledge and practice.

References

1. Koontalay A, Sangsaikaew A & Khamrassame A.(2020). Effect of a Clinical Nursing Practice Guideline of Enteral Nutrition Care on the Duration of Mechanical Ventilator for Critically Ill Patients. Asian nursing research. Feb 1;14(1):17-23.
2. Babapour SK, Esmaeili R, Esteki T, Naderiravesh N, Pourhoseingholi MA, Marzangu SM. (2016). Nurses' practice about performance of nasogastric tube feeding in intensive care unit. International Journal of Advanced Biotechnology and Research.;7(5):1585-1594.
3. Al-Qalah TA, Alrubaiee GG (2020). Intensive care nurses' knowledge of enteral nutrition at public hospitals in Sana'a, Yemen: a cross-sectional survey. F1000Research. Jul 22; 9(759):759.
4. Al Kalaldeh MT. (2012). Enteral Nutrition in the Critically Ill: A Mixed-methods Study of Adherence to Evidence-based Protocols, Nursing Responsibility and Teamwork. Jan.
5. Ahmed F, Ahmed O, Albitar E, Ghoneim S. (2018). Effect of Educational Nursing Guidelines Regarding Enteral Feeding on Nurses ' Knowledge and Practices at Critical Care Units. Journal of Nursing and Health Science. Oct;7(5):69–75.
6. Araújo-Junqueira L, De-Souza DA. (2012). Enteral nutrition therapy for critically ill adult patients; critical review and algorithm creation. Nutricion hospitalaria. Aug;27(4) p:999-1008.
7. Akçay K, Suluhan D, Kesik G, Uzunoğlu K, Kartal E, Şahna A.(2020). Nursing Practices in Enteral Nutrition. Clinical Science of Nutrition. July.
8. Rezaei, F., Savadi, M. H., Douki, M. F., & Shiadeh, F. S. A. (2018). Comparison of Enteral Feeding Implementation with Standards in Educational Centers, Selected Therapeutics in Babol University of Medical Sciences. International Journal of Ayurvedic Medicine, 9(2); P: 106-110.
9. Nalukenge J (2016). Knowledge Attitude and Practices Towards Nasogastric Tube Insertion

Among the Nurses in International Hospital Kampala (Doctoral dissertation, International Health Sciences University).

10. Mahdy A, Hamed L & Shehata A. (2016). Efficacy of Safety Measures and Discharge Planning Guidelines on Nurses for Enteral Nutrition of Comatose Patients. International Journal of Novel Research in Healthcare and Nursing. 6(3) P: 220-231.
11. Abdullah M, Mohammed W, Ismail M. (2014). Nurses' knowledge and practices about administration of medications via nasogastric tube among critically ill patients. Journal of Education and Practice. 5(1) P:147-159.
12. Mohammed M, el Prince Mahmoud M, Sleem H and Shehab M. (2017). Assessment of the Nurses Performance in Providing Care to Patients Undergoing Nasogastric Tube in Suez Canal University Hospital. International Journal of Caring Sciences. May; 10(2) P: 915.
13. Bedier N, Diab AE-H, Abo EL-Ata A. (2016). Assessment of Nurses's Performance Regarding Nutritional Support for Mechanically Ventilated Patients. Port Said Sci J Nurs. June;3(1):57–73.