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Effectiveness of an interventional program on nurses practices toward enteral nutritional support for unconscious patient at critical care unite in Imam al-Hussein medical city in Holy Karbala

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***Abstract*---**Background: , nurses lack the expertise and awareness of enteral nutrition, indicating the necessity of educating them on the nutitonal support . Enhancing the intensive care nurses' knowledge about nutrition may lead to improved nursing practices. Objectives: to determine the effectiveness of the interventional program on nurses practices toward enteral nutritional support for unconscious patient. Methods: A quasi-experimental was conducted at the Critical Care Unit in Imam AL-Hussein Medical City in Holy Karbala . A non-probability "purposive sample" of (60) nurses who are working at critical care unit . the sample divided into two groups, control group consist of (30) nurses and study group consist of (30) nurses exposed to the nursing educational program. Data were collected by the researcher observed and checked for correct and incorrect performance. The nurses' Practices check list was composed of (48) items. Results: The study's findings indicate that the study group's practices of enteral nutrition support for unconscious patients is greater to that of the control group at the post-test, as compared to the control group's knowledge , so the interventional program was effective in increasing nurses' practices . Conclusion: The nurse's practice's toward nutrition support for unconscious patients is inadequate at pre test. There were positive affect of interventional program in the improvement of the nursing staffs' practices concerning nutrition support for unconscious patients

Recommendation: create a written updated guidelines of nutritional support to ensure enough knowledge, unified and safe nursing practice. plement this education program on other hospitals in Iraq Examine the barriers to implementing evidence-based nutritional support techniques in a clinical setting.

***Keywords*---**effectiveness, knowledge, enteral, nutrition, unconscious, patient critical**.**

Introduction

A patient's nutritional condition can be impacted by critical care nurses' attitudes, performance and knowledge, related to feeding. nutrition has a positive reputation among critical care nurses, according to previous study. although, nurses lack the expertise and awareness of enteral nutrition, indicating the necessity of educating them on the nutitonal support . Enhancing the intensive care nurses' knowledge about nutrition may lead to improved nursing practices (1) (2).

Despite the fact that certain international nutrition organizations provid nutrition guidelines for patients in ICU, Significant gaps exists between these guidelines recommendations and actual clinical practice. Previous research has found that nurses' lack of knowledge and perception of nutrition importance , as well as the ICU's low priority for nutrition, may lead to the ineffective implementation of these guidelines (3) (4).

In the United Kingdom, the number of patients who require this type of feeding is increasing at a rate of more than 20% to 25% each year, making it the responsibility of health care practitioners to improve their knowledge and abilities in order to better manage this type of nutrition. Nutritional support procedures have changed over the years through the use of technology to become a safe, comfortable, and efficient method of providing nutritional assistance, and it has become a significant component in the management of patients with complex illnesses (5) (6).

Method

The Study Design: a quasi-experimental study design to determine the effectiveness of the interventional program on nurses practices toward enteral nutritional support for unconscious patient.

Study Sample :The total number of nurses working in the intensive care unit at AL-Hussein Medical City Hospital was purposefully selected and divided into two groups: thirty nurses as the study group were exposed to the nursing education program, and thirty nurses as the control group were not exposed to the program Inclusion Criteria nurses who are : working in intensive care unit., least one year of experience or more, work in the morning and night shifts., score less than 60% in pre-test ,and agree to participate in the study.

Exclusion Criteria nurses who are: selected for pilot study, refuse to complete the post-test, and included in the study's pre-test sample and transferred from the clinical unit or hospital during sample selection.
Instrument :the researcher constructed a questionnaire format in order to reach the objectives of the study, consisted of (2) parts:
Part I: Self-administered questionnaire form relevant to the nurses' demographic data.
Part II : An observational checklist for nurse's practices toward
Nutritional support **.** An observational check list was constructed by the researcher to evaluate the nurse's practice with respect to procedures of patients assessment regarding Nutritional support for unconscious patient , the researcher observed and checked for correct and incorrect performance. The nurses' Practices check list was composed of (48) yes or no item . These items were graded on a Liker's scale as follows: always (3), sometimes (2-1), and never (0). Three episodes of events were observed for each respondent to determine the scale's levels; three correct practices out of three episodes were rated as always, 2-1 correct practices out of (3) episodes were rated as sometimes, and incorrect practices were evaluated as never.
Reliability of the instruments : The researcher conducted reliability testing on the on six nurses, and co observer reliability was performed for the determined internal consistency of the instrument, and the person correlation coefficient was computed for each determination. The correlation coefficient for (91) items was found to be r = 0.83 at the level (r equal or greater than 0.70), which was statistically acceptable.
Methods of Statistic : Descriptive approach (Frequencies, percent , and Mean of scores "M.s."). Inferential approach(t-test Period t-test , Independent t-test and One Way ANOVA)

Results

With a p-value less than 0.01 in comparison to the statistical mean, the study's findings show that there is a highly significant difference in the overall responses of the study group over two measurement periods (pre- and post-test) compared to the statistical mean. Additionally, the study's findings reveal that, when comparing post-test scores to pre-test scores, there is an improvement in the nurses' knowledge (table 1).

Table(1)Statistical distribution of the study group by their overall responses with Significant Difference between Pre-Test and Post-Test Scores of enteral nutrition support practices

	Rating	Pre-test				Post-test			
		Freq.	%	M.S.	S.D	Freq.	%	M.S	S.D
Overall Evaluation of enteral for study group	Never	30	100	1.21	.125	0	0	2.29	.102
	Sometime	0	0			24	80.0		
	Always	0	0			6	20.0		
	t-value (-42.714), d.f. (29), p-value (.000)								

(M.s) mean of score 1.5 , (SD) stander deviation (P) pass, (F) fail ,(Ns): Non-significant (S): significant , (T value): t-test, (D f): degree of freedom

The findings of the study indicate that there is no statistically significant difference between the overall responses of the control group during two periods of measurement (pre- and post-test) with a p-value greater than 0.05 in relation to the statistical mean between the two periods of measurement. Consequently, the outcomes of the study indicate that there is no improvement in the nurses' knowledge between the pre- and post-test scores (table 2).

Table(2)Statistical distribution of the control group by their overall responses with Significant Difference between Pre-Test and Post-Test Scores to enteral nutrition support practice

	Rating	Pre-test				Post-test			
		Freq.	%	M.S.	S.D	Freq.	%	M.S	S.D
Overall Evaluation of enteral for control group	Never	28	93.3	1.20	.212	27	90.0	1.24	.226
	Sometime	2	6.7			3	10.0		
	Always	0	0			0	0		
	t-value (-1.629), d.f. (29), p-value(.114)								

(M.s) mean of score 1.5 , (SD) stander deviation (P) pass, (F) fail ,(Ns): Non-significant (S): significant , (T value): t-test, (D f): degree of freedom

The study's findings indicate that there is no statistically significant differences in nurses practice between pretest of study group (mean of score 1.2130), and control group (mean of score 1.2069) (table3).

Table(3)Significant Difference between Study and Control Groups regarding pre-Test enteral practice Scores

	Rating	Pre-test case				pre-test control			
		Freq.	%	M.S.	S.D	Freq.	%	M.S	S.D
Overall Evaluation of enteral	Never	30	100	1.21	.125	28	93.3	1.20	.21279
	Sometime	0	0			2	6.7		
	Always	0	0			0	0		
	t-value (1.833), d.f. (58), p-value(.086)								

(M.s) mean of score 1.5 , (SD) stander deviation (P) pass, (F) fail ,(Ns): Non-significant (S): significant , (T value): t-test, (D f): degree of freedom

The study's findings indicate that there is statistically significant differences in nurses practice between posttest of study group (mean of score 2.2902), and control group (mean of score 1.2488) (table 4).

Table(4) Significant Difference between Study and Control Groups regarding post-Test of enteral nutrition support practices Scores

	Rating	Post-test case				Post-test			
		Freq.	%	M.S.	S.D	Freq.	%	M.S	S.D
Overall Evaluation of Enteral	Never	0	0	2.29	.102	27	90	1.24	.226
	Sometime	24	80			3	10		
	Always	6	20			0	0		
	t-value (20.260), d.f. (58), p-value(.000)								

(M.s) mean of score 1.5 , (SD) stander deviation (P) pass, (F) fail ,(Ns): Non-significant (S): significant , (T value): t-test, (D f): degree of freedom

The study demonstrates that there is no statistically significant relationship between nurses' knowledge and their age, level of education, marital status, total number of service years, and number of experience years in intensive care unit with a p-value of less than 0.05, respectively (table5). Also the study shows that there is a non-significant difference between the overall assessment of the nurses' knowledge regarding enteral nutrition support and their gender (table 6).

Table(5)Mean Differences (ANOVA) Between the Overall Assessment of the Nurses' Knowledge regarding Enteral Nutrition Support at Post (Study Group) test according to their Some Demographic Data

Demographic Data		Squares	df	Mean Square	F	Sig.
Age(years)	Between Group	242.400	8	30.300	2.004	.096
	Within Group	317.467	21	15.117		
	Total	559.867	29			
Level of education	Between Groups	8.350	8	1.044	1.834	.127
	Within Groups	11.950	21	.569		
	Total	20.300	29			
Marital status	Between Groups	2.733	8	.342	1.606	.183
	Within Groups	4.467	21	.213		
	Total	7.200	29			
Total Number of service's years	Between Groups	315.383	8	39.423	1.909	.112
	Within Groups	433.583	21	20.647		
	Total	748.967	29			
Number of experience years in intensive care unit	Between Groups	64.050	8	8.006	1.717	.153
	Within Groups	97.950	21	4.664		
	Total	162.000	29			

Table (6). Mean Differences (t-test) Between the overall assessment of the nurses' knowledge regarding enteral Nutrition Support at Post (Study Group) test according to their gender

Enteral nutrition Support	N	Mean	Std. Deviation	Std. Error Mean	t	df	sig

gender	male	21	1.7317	.10026	.02188	.285	28	.778 Ns
	female	9	1.7185	.15010	.05003			

(M.s) mean of score 1.5 , (SD) stander deviation (P) pass, (F) fail ,(Ns): Non-significant (S): significant , (T value): t-test, (D f): degree of freedom

Discussion

Nurses practices towards enteral nutrition support for unconscious patients in critical care units at Pre Test for study and control Groups

The findings indicated that the study sample responses at the pre-test for study-control groups were evaluated. that the study group's pre-test practices for enteral feeding supplementation for unconscious patients in intensive care units are inadequate. Seferoğlu, et al., (2021) determined the enteral nutrition practices of intensive care unit (ICU) nurses in Turkey and the factors affecting these practices which done on 196 intensive care unit nurses, they found in their study The total score of the nurses on EN practice was 126.82, 16.18 (range, 35-175). Only 34.6% of the people who took part in the study were found to have enough good EN practices (7). Batalla , et al., (2021) have evaluated nurses practice regarding eneral nutrition support , Quota sampling of nurses (n=138) working in wards and intensive care units of a tertiary hospital for adult patients requiring enteral nutritional support was performed, they found that majority of study sample was inadequate practices (8). Xu et al., (2020), have concluded in their study which conducted on 408 registered nurse , in hospitals of Xiamen, China to investigate practices of nasogastric tube (NGT) intubation and feeding, the study has shown that he nasogastric feeding practices of many clinical nurses were not consistent with international guidelines (9) . Babapour et al., (2020) have found in their study that to evaluated nasogastric tube feeding. The study has conducted on 100 nurses in ICU inpatients using a researcher made checklist through direct observation. The mean score of the nurses was significantly less than the standard score; most nurses scored intermediate and only a few of them achieved good score (10). Mahmoud (2018) has found in his study to evaluated nurses' skills toward NG feeding for critically ill patient which conducted on 40 critical care nurses attended in the critical Care Unit of Cairo University Hospitals he concluded that the Nurses had unsatisfactory level of practices (11). Metwaly et al., (2013) have concluded in their study which conducted on (100) nurses how were working in all ICUs at Zagazig University Hospitals to find out the nurses' performance regarding nasogastric tube feeding in Intensive Care Units the study finding revealed the level of practices was unsatisfactory (12). Alhashemi et al., (2019) evaluated knowledge, attitudes, and practice KAP of intensive-care nurses with regard to feeding delivery through enteral feeding tubes before and after their training program, was carried on 82 nurses working in six different intensive care units (ICUs) at two major training hospitals connected with Shiraz University of Medical Sciences (SUMS), the primary referral centers for patients in southern Iran, they discovered that nurses' overall knowledge increased significantly following the training program in the case group (13)

Nurses practices towards enteral nutrition support for unconscious patients in critical care units at Post Test for study and control Groups

The findings revealed that the study sample responses were assessed at the post-test for the study group in the study. The study's findings indicate that the study group's practices of enteral nutrition for unconscious patients in critical care units is greater to that of the control group at the post-test, as compared to the control group's practices of the same topic. The results of testing the significance of checklist items revealed a majority of highly significant differences with a p-value of 0.01, indicating the effectiveness of the studied educational program by increasing the practices levels of the study group's nurse staff, and thus confirming the importance or success of implementing the suggested program. The nurses' level of practices was significantly higher post-implementation of the specified educational program than pre-implementation. The educational program was effective in increasing nurses' practices , which was found to be positively associated with enteral nutrition support for unconscious patients comprehend among the study group of nurses. It is advised that intensive care units be supplied with continual education training. Mohammed et al., (2021) evaluated the effect of nursing guidelines on nurses' skills in terms of nasogastric tube complications in critically ill patients. was conducted on (60) nurses who worked in the Benha University Hospital's Intensive Care Unit. They discovered that the majority of nurses had inadequate knowledge and practice scores regarding nasogastric tubes prior to the implementation of the guidelines (70 percent and 53.3 percent, respectively), which improved immediately after the guidelines were implemented (93.3 percent and 95 percent, respectively) (p0.001) (14). El-Meanawi (2017) has found in his study to examined the effectiveness of an educational program on nurse's knowledge and performance related to nasogastric tube feeding care. It was discovered that there is a significant different between pre and post evaluation scores in relation to nurse's knowledge and performance following completion of the educational program (15) . Bedier, et al., (2014) have explained in their study to investigate the impact of an educational program on nurses' practice in the area of nasogastric tube feeding care. The trial involved 30 participants who worked in the intensive care unit at Al-Azhar university hospital. They concluded that by implementing an educational program for nurses caring for patients with nasogastric tube feeding, the overall level of practice of nurses was greatly enhanced (16).

Mean differences between the overall evaluation of the nurses' practices regarding enteral nutrition support at Post (Study Group) test according to nurses demographic characteristics

Findings shows that there is statistical significant between nurses practices their level of education and Number of experience years in intensive care unit, at (post-test) educational program follow up $p\text{-}value \leq 0.05$,. Ahmed and Hassan (2021) have investigated in their study the effectiveness of interventional program concerning feeding by enteral methods guideline on nurses' practices in intensive care units. They have concluded that there were a highly significant correlation between the effectiveness of interventional program and educational level of nurses (17). Randa et al., (2021) have found in their study that assessed the nursing performance toward enteral feeding at pediatric critical care units , they

found in their study that were high significant relationship between nurses practice regarding enteral nutrition and their level education and years of experiences (18).

Ethical Considerations: Nurses were informed that their participation was voluntary in the study. The purpose and the benefits of the study was explained by the researcher. After they agreed to participate in the study.

Recommendation

1. Developing the educational program about Nutritional Support for Unconscious Patients during academic educational program for nursing students.
2. Special and long continuing educational program should be established and applied for nurses who are working in intensive care units concerning Nutritional Support for Unconscious Patients
3. Designating and distributing a booklet to all nurses, those who are working in intensive care units about Nutritional Support for Unconscious Patients
4. Work on the principle of reward and punishment in the application the guidelines of nutritional support in intensive care units
5. Collaborate as a member of the multidisciplinary team in nutrition-related clinical practice, education, and research

Author's Contributions

Study concept; Writing the original draft; Data collection; Data analysis and reviewing the final edition by all authors.

Disclosure Statement

The authors report no conflict of interest.

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