

RESEARCH ARTICLE

Effectiveness of an educational program on nurses knowledge toward parenteral 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 play an important part in the treatment of total parenteral nutrition TPN patients, which involves maintaining the catheter and delivery system, preparing and giving TPN solutions, changing dressings at the catheter insertion site, and replacing the infusion set on a regular basis

Objectives: to Measure the Effectiveness of an Educational Program on Nurses Knowledge toward parenteral Nutritional Support for Unconscious Patients

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 using Self-administered questionnaire

Results: The study's findings indicate that the study group's knowledge of parenteral nutrition support 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 knowledge , so the educational program was effective in increasing nurses' knowledge.

Conclusion: Nurses working in intensive care Unit have inadequate knowledge concerning nutrition support for Unconscious Patients and need specific educational program and training session.

Recommendation: Emphasize nutrition as a therapy for critically ill patients because of its importance in improving their outcomes. Use social contact and social network development to communicate nutritional support guidelines in the therapeutic setting..

Keywords: Effectiveness , knowledge , parenteral, nutrition, unconscious , patient critical.



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INTRODUCTION

Nurses play an important part in the treatment of total parenteral nutrition TPN patients, which involves maintaining the catheter and delivery system, preparing and giving TPN solutions, changing dressings at the catheter insertion site, and replacing the infusion set on a regular basis. (Martindale, 2009). Nursing personnel who care for patients in a critical care unit who are receiving TPN must be knowledgeable with its nutritional delivery (Taha. 2014) .

The frequency and consequences of nursing feeding errors affect the patient's health as well as the overall cost of health care. These errors in nutrition and the reactions they generate increase the length of stay, the expense of care, and the incapacity and death of patients. There are a number of consequences for the nurse engaged, including a decrease in their self-confidence as well as their ability to practice as a professional nurse. Nurses must be aware of the indications, standard dosage, and prescribed nutrition in order to guarantee safe and effective pharmacological therapy for patients. In addition, nurses must do a thorough evaluation of each patient before delivering a medication. It's just as crucial that nurses know how to give drugs properly so that the patient doesn't feel anxious and the drug is as effective as possible (Gillanders, et al., 2009 and Boullata et al., 20017) .

European Society for Clinical Nutrition and Metabolism (ESPEN) has produced standard operating procedures (SOPs) and guidelines to ensure that the patient receive the best nutritional therapy possible. Clinical nutritional therapy guidelines are modified on a routine basis and include a wide range of topics including length, timing and vulnerable patient populations such as those suffering from dysphagia or frailty. on the other hand, the nutritional support is frequently not given the highest priority in clinical practice because of other symptomatic concerns such as cardiovascular condition or the requirement for mechanical ventilation (Hoffmann, et al., 2021 and ; Singer, et al., 2019).

METHOD

The Study Design: quasi-experimental study design To determine the effectiveness of the educational program on nurses' knowledge toward parenteral Nutritional Support for Unconscious Patients at Critical Care Units.

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. agree to participate in the study.

Exclusion Criteria nurses who are: selected for pilot study. refuse to complete the post-test. included in the study's pre-test sample and transferred from the clinical unit or hospital during sample selection.

Study Instruments: consisted of (2) parts: Part I: Self-administered questionnaire form relevant to the nurses' demographic data. Part II: Self - administered questionnaire sheet related to nurses knowledge about parenteral nutritional support for unconscious patient . It was prepared and reviewed using only the most current and relevant material. The nurses completed the questionnaire form; the goal of the study was stated prior to receiving the questionnaire sheet. The questionnaire was to be completed in 20 minutes by the participants. consists of 20 multiple-choice items, The questions were graded as correct (2) and wrong (1).

Validity of the Questionnaire: Validity is one of the main concerns with research. Valid measures help reducing the probability of making type 2 error. The questionnaire was presented to (10) panel of experts in the area of competence to maintain the validity of the instrument

Reliability of the instruments : On six nurses, reliability testing was utilized as a statistical analysis method to determine the concordance between the questionnaire items using the reliability coefficient . Cronbach's alpha (0.78) indicated that the scale had an appropriate level of internal consistency.

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

The study's findings show a highly significant difference in the study group's overall answers over two measurement periods (pre- and post-test), with a p-value less than 0.01, comparative to the statistical mean. Additionally, the study's findings reveal that nurses' knowledge has

improved when post-test scores are compared to pre-test levels table (1).

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. In this way, the study's results indicate that there is no improvement in the nurses' knowledge between the pre- and post-testing periods of the investigation table (2).

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 (3).

The results shows that there is a statistically significant relationship between nurses' knowledge and their age, service, and Total Number of service years at a p-value less than 0.05, and that there is no statistically significant relationship between nurses' knowledge and their level of education or marital status at a p-value less than 0.05(4) the result demonstrates that there is no statistically significant difference in the overall assessment of nurses' knowledge of parenteral nutrition support based on their gender table (5).

Table 1. Statistical distribution of the study group by their overall responses with Significant Difference between Pre-Test and Post-Test Scores Regarding to knowledge of parenteral Nutrition Support.

Overall assessment of Parenteral Nutrition Support for study group	Pre-test				Post-test			
	Freq.	%	M.s.	S.d	Freq.	%	M.s.	S.d
Fail	30	100	1.14	.0824	0	0	1.72	.114
Pass	0	0			30	100		

t-value (-14.792), 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

Table 2. Statistical distribution of the control group by their overall responses with Significant Difference between Pre-Test and Post-Test Scores Regarding to knowledge of parenteral Nutrition Support.

Overall assessment of parenteral for control group	Pre-test				Post-test			
	Freq	%	M.s	S.d	Freq	%	M.s	S.d
Fail	27	90	1.2	.29	28	93.3	1.1	.23
Pass	3	10	0	1	2	6.7	9	2

t-value(.259), d.f. (29), p-value (.798)

(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

Table 3. Significant Difference between Study and Control Groups regarding post-Test of parenteral nutrition support knowledge Scores.

Overall assessment of Parenteral	Post –test case				Post-test control			
	Freq.	%	M.s.	S.d	Freq.	%	M.s.	S.d
Fail	0	0	1.72	.114	28	93.3	1.19	.232
Pass	30	100			2	6.7		

t-value(9.575), 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

Table4. mean differences(ANOVA) between the overall assessment of the nurses' knowledge regarding Parenteral nutrition support at Post(Study Group) test according to their some demographic data.

demographic data		Sum of Squares	df	Mean Square	F	Sig.
Age	Between Groups	197.789	5	39.558	2.622	.050
	Within Groups	362.078	24	15.087		
	Total	559.867	29			
Level of education	Between Groups	5.944	5	1.189	1.988	.117
	Within Groups	14.356	24	.598		
	Total	20.300	29			

Marital status	Between Groups	1.472	5	.294	1.234	.324
	Within Groups	5.728	24	.239		
	Total	7.200	29			
Total Number of service's years	Between Groups	303.467	5	60.693	3.270	.022
	Within Groups	445.500	24	18.563		
	Total	748.967	29			
Number of experience years in intensive care unit	Between Groups	63.550	5	12.710	3.098	.027
	Within Groups	98.450	24	4.102		
	Total	162.000	29			

Table 5. mean differences (t-test) between the overall assessment of the nurses' knowledge regarding parenteral nutrition support at Post (Study Group) test according to their gender.

Parenteral Nutrition Support	N	Mean	Std. Deviation	Std. Error Mean	t	df	sig
Gender	Male	21	1.6865	.15116	.03299	-	28
	Female	9	1.7222	.13176	.04392		

DISCUSSION

Nurses knowledge towards parenteral nutrition support for unconscious patients in intensive care units at Pre Test for control and study groups

The findings indicated that the study sample responses at the pre-test for study-control groups were assessed. The study's findings indicate that the study group's knowledge on parenteral nutrition support for unconscious patients in intensive care units is inadequate at the pre-test. Mistry (2019) assessed the nurses knowledge regarding Total Parenteral Nutrition (TPN) in ICU , quantitative approaches were used to describe the data in this investigation. Non-probability purposive sampling and a structured questionnaire were used to determine (22) staff nurses., he found in his that The nurses had inadequate knowledge about the TPN .Seol, et al., (2020) investigated the perspectives of icu nurses regarding the withdrawal or withholding of parenteral feeding in the hospital setting (PN). The research has been carried out on 141 nurses who worked in icu at a tertiary university hospital in the United Kingdom. According to the findings of the study, the nurse had more bad attitudes and much less knowledge of PN. Abdel-Fattah et al., (2018) have assessed in their study nurses knowledge about parenteral nutrition at neonatal intensive care units which done on 70 nurses working in Intensive care units at Benha city in Benha University Hospital, Teaching Hospital and Specialized Pediatric Hospital, they have concluded that more than three quarters of studied nurses had unsatisfactory level of total knowledge scores .TAHA (2014), have concluded in their study, which assessed critical care nurses' knowledge and practices related total parenteral nutrition. The study was done on 80 nurses from various critical care units at Menofiya and Benha University Hospitals. The

study show that critical care nurses has insufficient knowledge .

Nurses knowledge towards parenteral nutrition support for unconscious patients in intensive care units at Post Test for control and study 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 knowledge of parenteral feeding support 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 knowledge of the same topic.The results of testing the significance of questionnaire 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 knowledge levels of the study group's nurse staff, and thus confirming the importance or success of implementing the suggested program. The nurses' level of knowledge was significantly higher post-implementation of the specified educational program than pre-implementation. The educational program was effective in increasing nurses' knowledge, which was found to be positively associated with parenteral support for unconscious patients comprehend among the study group of nurses. It is advised that intensive care units be supplied with continual education training. Ameri et al., (2016) have study was done on 30 nurses who work in intensive care units at Sarem Maternity Hospital in Tehran, Iran. They were given training to improve their knowledge and practice in the management of TPN. They conclude that the knowledge of the nurses in all areas of parenteral nutrition prescription was significantly stronger after they used the mentoring method (p 0.05). Al-Rafay and Sabah (2012) have concluded in their study which conducted on 40 nurses , in Ain Shams University Hospital in Cairo, Egypt , to measure the effect of the implemented guidelines

program about nursing care of TPN for NICU nurses on the educational outcomes, the study has shown that the program had a significant positive impact on nurses' knowledge and practice outcomes.

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

Findings shows that there is statistical significant between nurses knowledge and their age, service, and Total Number of service's years at (post-test) educational program follow up p -value ≥ 0.05 , since no significant different are accounted at p -value ≤ 0.05 , among nurses their level of education, marital status and gender. Manal et al., (2018) have assessed the nurses knowledge and practices regarding total parenteral nutrition, the study was conducted on (60) critical care nurses from different critical care units with a minimum one year of experience who are working in Cairo University Hospitals, they have concluded that no significant correlations were found between years of experience, age, marital status and their level of knowledge regarding total parenteral nutrition. Also they founded that were significant correlations between Gender, education level.

CONCLUSIONS

The nurse's knowledge and practice's toward nutrition support for unconscious patients is inadequate at pre test. There were positive affect of education program in the improvement of the nursing staffs' knowledge and practices concerning nutrition support for unconscious patients. Intensive care nurses do not educate themselves about nutritional support for Unconscious Patients. Findings show that there were no differences in the knowledge and practices of nurses in either the study or control groups in the pretest.

RECOMMENDATION

create a written updated guidelines of nutritional support to ensure enough knowledge, unified and safe nursing practice implement this education program on other hospitals in Iraq. Examine the barriers to implementing evidence-based nutritional support techniques in a clinical setting. Emphasize nutrition as a therapy for critically ill patients because of its importance in improving their outcomes. Use social contact and social network development to communicate nutritional support guidelines in the therapeutic setting.

ETHICAL CONSIDERATIONS COMPLIANCE WITH ETHICAL GUIDELINES

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.

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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