Effectiveness of Communication Skills for Patients Undergoing Mechanical Ventilation Educational Program on the Intensive Care Unit Nurses Knowledge in Al- Hilla City, Iraq

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Abstract

Background: Communication serves as the foundation for the connection between a nurse and patient and is a crucial component of trust and comfort. Nurses working in the critical care units (CCU) face especial challenges when communicate with unconscious ill, mechanically ventilated or sedated patients. Communication between these patients and nurses needs specific skill of commitment, and knowledge. Objective: To evaluate the intensive care unit nurse's knowledge related to educational program constricted for communication with patients undergoing mechanical ventilation as a nursing competence. Methodology: A quantitative study quasi-experimental design was used with the application of pre, and posttest to achieve the study objectives which directed to evaluate the Effectiveness of Patient Communication Skills for Patients Undergoing Mechanical Ventilation Educational Program on the Intensive Care Unit Nurses Knowledge started from 9 January to 27 May 2022. The study conduct at the intensive care units at Al- Hilla Teaching Hospital (Al- Hilla teaching hospital and Imam Al- Sadeq teaching hospital). Purposive non- probability sample methods used to select the sample of the study to achieve the study objectives. The study sample consisted of (63) nurses divided as (30) nurses for interventional group, and (33) nurses for control group specific questionnaire prepared to collect the data by interview method. Results: most of participants 16(48.5%) and 19(63.3%) in both group (control and interventional) were between age group(24-26) years, 18(54.5%), 19(63.3%) were male, most of them were bachelor holder 22(66.7%) and 18(60.0%). Related to their marital status 17(51.5%) in the control group were married, while 17(56.7%) in the interventional group were single, when most of the demographical characteristics matched among the study group it mean the equivalence of the group. The pretest of both study group recorded unsatisfied level of knowledge related to communication with patients under artificial ventilation as (1.26 _+ 0.181), (1.30 _+ 0.197). During the posttest the control group shows the same poor level clearly, while the nurses who attend the educational program session recorded significant improvement in their two posttests as (1.76_+0.206) and (1.74_+ 0.216). This indicated the effectiveness of the content which presented in the educational program related to this issue. Conclusion: Significant improvement appear clearly among the interventional group member through the result of their pre and posttest, which explain the effectiveness of the educational program session content on the nurse's knowledge. Recommendation: Training the nurses who work in intensive care unit about the communication with patient under mechanical ventilation.

Keywords: Effectiveness, Communication skill, Mechanical Ventilation, educational program

1. Introduction

To increase the quality of treatment and safety therapeutic communication should be maintained with hospitalized patients. Because of intubation, patients in the critical area often lose their ability to speak and communicate. There is a link between speech loss and strong emotional responses in intensive care unit patients, including stress, high levels of frustration, depression, and anxiety (Baumgarten & Poulsen, 2015). Annually, in the United States more than 2.7 million patients who admitted to the intensive care units are unable to speak, because of the assisted ventilation (mechanical ventilation) and artificial airways. Fatigue, sleepiness, delirium, or neurological disease may further limit communication capacity in patients with critical illness. Patients in critical care units who are mechanically ventilated are more likely to experience anxiety, fear, anger, frustration, sleepiness, and discomfort because of communication difficulties. When patients' loss their abilities to communicate verbally to explain their pain and needs make nurses full frustrated actually who provide direct care and spend most of their time with such patients (Happ, et. al., 2011).

The care of patients who are unable to communicate verbally is particularly demanding for health-care

doi.org/10.31838/hiv22.02.816 Received: 10.07.21, Revised: 22.08.21, Accepted: 09.09.21

professionals because it necessitates specific skills such as clinical evaluation of level of consciousness, level of pain, and relational skills, as well as the use of nonverbal communication to maximize the likelihood of patient recovery (Foà, et. al., 2016). Communication is necessary element of the nurse therapeutic role which cannot be delegated to anyone else. The situation may challenge nurses from employing any form of communication such as communication with the mechanically ventilated patients which have a double effect including both patients and their families to insure their satisfaction with the care which given through provision of information and explaining procedures even no responses may receive (Dithole, 2014). Failure to understand the patients need may act as negative factor on nursing care and limit the patient's reaction. Successful communication can help ventilator-dependent patients recover faster, whereas unsuccessful communication can cause patients to recover more slowly (Otuzoğlu & Karahan, 2014).

Objectives of the Study

1- Assess critical care unit nurses' knowledge toward communication skills for patients undergoing mechanical ventilation.
2- Evaluate the effectiveness of an educational program modeled toward communication skills which used for patients undergoing mechanical ventilation on critical care nurses' knowledge.

2. Methodology

A quantitative study quasi-experimental design was used with the application of pre, and posttest to achieve the study objectives which directed to evaluate the Effectiveness of Patient Communication Skills for Patients Undergoing Mechanical Ventilation Educational Program on the Intensive Care Unit Nurses Knowledge started from 9 January to 27 May 2022. The research condict at the intensive care units at Al- Hilla Teaching Hospital (Al- Hilla teaching hospital and Imam Al- Sadeq teaching hospital). Purposive non- probability sample methods used to select the sample of the study to achieve the study objectives. The study sample consisted of (63) nurses out of (125) nurses were selected, he sample divided as (30) nurses for interventional group, and (33) nurses for control group specific questionnaire prepared to collect the data by interview method.

In order to evaluate the effectiveness of patient communication skills for patients undergoing mechanical ventilation educational program on the intensive care unit nurses knowledge in Al- Hilla city , after review of literature proper questionnaire were constructed. The questionnaire includes three part: first part: demographic characteristics of nurses, second part was employment information, third part knowledge of nurses on mechanical ventilating patient communication that include two domains. Reliability of the knowledge questionnaire was determined by using reliability coefficients (r = 0.80) by (SPSS) version 25, which is statically accepted.

Ethical Consideration

Before conducting the study, verbal and written permission was taken from the all nurses that participate in the study.

Data Collection

Table 1: Allocation of the interventional and control group members according to the demographical characteristic

Demographic characteristic	Rating	Control group		Interventional	
		frequency	percent	frequency	percent
Age/ years	Less than 24	7	21.2	7	23.3
	24-26	16	48.5	19	63.3
	more than 26	10	30.3	4	13.3
	total	33	100.0	30	100.0
Gender	Male	18	54.5	19	63.3
	Female	15	45.5	11	36.7
	Total	33	100.0	30	100.0
Education status	Nursing school graduate	0	0	2	6.7
	Graduate Diploma in Nursing	11	33.3	9	30.0
	Bachelor of Nursing graduate	22	66.7	18	60.0
	Postgraduate graduate	0	0	1	3.3
	Total	33	100.0	30	100.0
Marital status	Single	16	48.5	17	56.7
	Married	17	51.5	13	43.3
	separated	0	0	0	0
	widow	0	0	0	0
	divorced	0	0	0	0
	Total	33	100.0	30	100.0

Data were collected during the period 9 January to 27 May 2022); the sample of the study includes the nurses who working in intensive care unit and caring the patients undergoing mechanical ventilation. The nurses participated in the study after taking their agreement, the nurses need (20- 25) minutes to complete all items of questionnaire. All participant of study (63) are exposed to pre- test, to assess their nurses knowledge related to communication skills for patients undergoing mechanical ventilation. The educational program given to all interventional group (30) nurses. The educational program given to nurses to increase their knowledge regarding to communication, the educational program include two session, first session (the principles of communication with unconscious patient), while the second session about the (Communication with mechanically ventilated patients and their family).

Small group education method used; post- test carried out for both group which takes about four week to evaluate the effectiveness of the educational program on nurses knowledge. Each session takes nearly one hour.

3. Results of the Study

Table 2: Distribution of the study sample (interventional and control) related to their employment information

item	Rating and intervals	Control group		interventional group	
		frequency	percent	frequency	percent
Years of services in ICU	1year and less	15	45.5	22	73.3
	2-5 years	17	51.5	6	20.0
	6 and more	1	3.0	2	6.7
	Total	33	100.0	30	100.0
Participated in courses on communication with unconscious patients	yes	3	9.1	7	23.3
	no	30	90.9	23	76.7
	total	33	100.0	30	100.0

Table 3: Responses of the study sample (both group) related to their knowledge regarding communicational principles with unconscious patients

N	Items	Control			Interventional		
		Pre	Post1	Post2	pre	Post1	Post2
		Mean\ SD	M//SD	M//SD	M// SD	M//SD	M// SD
1.	Touch should be used cautiously with patients who are	1.55 0.506	1.73 0.452	1.61 0.496	1.57 0.504	1.93 0.254	1.90 0.305
2.	Communication with unconscious patients creates injury or major harmful physiological effects on the patient.	1.91 0.292	1.64 0.489	1.85 0.364	1.77 0.430	1.93 0.254	1.97 0.183
3.	The communication barriers include the following	1.67 0.479	1.61 0.496	1.67 0.479	1.43 0.504	1.47 0.507	1.50 0.509
4.	The most common aftermaths of coma and hospitalization in ICU for patient is	1.61 0.496	1.48 0.508	1.48 0.508	1.43 0.504	1.83 0.379	1.73 0.450
5.	The information received by unconscious patients contributes to	1.24 0.435	1.30 0.467	1.33 0.479	1.37 0.490	2 0	1.97 0.183
6.	Intensive care unit syndrome, which includes the following	1.18 0.392	1.39 0.496	1.33 0.479	1.47 0.507	1.7 0.466	1.57 0.504
7.	The nurse must introduce himself to the unconscious patient when providing care	1.15 0.364	1.18 0.392	1.15 0.364	1.23 0.430	1.97 0.183	2 0
8.	The nurse should communicate with the unconscious patient as she/ he communicate with other alert patients	1.30 0.467	1.21 0.415	1.18 0.392	1.30 0.466	2 0	1.93 0.254
9.	It is not necessary to inform unconscious patients of current events, such as diagnosis, treatment, medical and nursing interventions	1.12 0.331	1.12 0.331	1.06 0.242	1.17 0.379	1.83 0.379	1.87 0.346
10.	When the nurse provided nursing care of the patient, such as withdrawing fluids or changing the patient's position, she/he should:	1.27 0.452	1.27 0.452	1.48 0.508	1.27 0.450	1.97 0.183	1.97 0.183
11.	The nurse directs the unconscious patient to the time and place at least once every-------- hours	1.27 0.452	1.24 0.435	1.39 0.496	1.37 0.490	1.97 0.183	1.97 0.183
12.	Lack of communication or insufficient communication between the nurse and the unconscious patient leads to	1.12 0.331	1.09 0.292	1.42 0.502	1.33 0.479	1.9 0.305	1.93 0.254
General mean and SD		1.37 0.254	1.36 0.21	1.41 0.225	1.39 0.160	1.87 0.154	1.86 0.167
Assessment		poor	poor	poor	poor	good	good
N		33	33	33	30	30	30
Mean of score (1.5), equal or more than 1.5 mean good, less than 1.5 mean poor							

Table 4: Responses of the study sample (both group) related to their knowledge regarding communication with patients under artificial ventilation							
N	Items	Control			Interventional		
		Pre	Post1	Post2	pre	Post1	Post2
		M// SD	M//SD	M// SD	M//SD	M// SD	M// SD
1.	There are several ways to enhance communication with ventilated patients such as:	1.18 0.392	1.27 0.452	1.24 0.435	1.13 0.346	1.60 0.498	1.67 0.479
2.	The most appropriate method of communication which preferred to use is for a patient on short-term ventilation who is alert and can move at least one hand	1.48 0.508	1.52 0.508	1.36 0.489	1.47 0.507	1.63 0.490	1.43 0.504
3.	Which of the following are alternative methods of communication for ventilator-dependent patients except:	1.33 0.479	1.48 0.508	1.18 0.392	1.40 0.498	1.33 0.479	1.37 0.490
4.	It is necessary to encourage the family of the unconscious patient to participate in patient care	1.39 0.496	1.48 0.508	1.52 0.508	1.60 0.498	1.90 0.305	1.93 0.254
5.	Visiting concept for dying patients in the critical care unit should be	1.06 0.242	1.15 0.364	1.21 0.415	1.27 0.450	1.93 0.254	1.97 0.183
6.	As the patient approaches death, it is important to continue care by the same nurse even after the shift is over	1.55 0.506	1.36 0.489	1.39 0.496	1.57 0.504	1.80 0.407	1.90 0.305
7.	Families must be allowed to be present during Cardiopulmonary resuscitation and all respiratory procedures	1.15 0.364	1.24 0.435	1.21 0.415	1.07 0.254	1.90 0.305	1.80 0.407
8.	Unconscious patients have a great need support and information	1.06 0.242	1.18 0.392	1.03 0.174	1.13 0.346	1.63 0.490	1.63 0.490
9.	is the unconscious patients hear and understand conversations around him	1.06 0.242	1.15 0.364	1.21 0.415	1.10 0.305	1.93 0.254	1.70 0.466
10.	Nurses should speak in a normal conversational tone while providing care to unconscious patients.	1.33 0.479	1.27 0.452	1.33 0.479	1.30 0.466	1.97 0.183	1.97 0.183
General mean and SD		1.26 0.181	1.31 0.141	1.27 0.135	1.30 0.197	1.76 0.206	1.74 0.216
Assessment		poor	poor	poor	poor	good	good
N		33	33	33	30	30	30
Mean of score (1.5), equal or more than 1.5 mean good, less than 1.5 mean poor							

Control Study

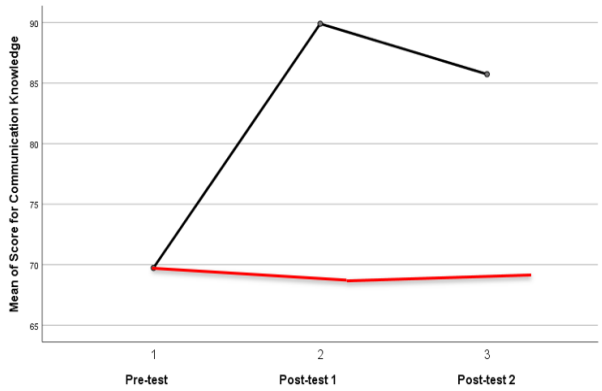

Figure 1: estimated marginal knowledge mean for both groups

Figure (1) show changes in the levels of the nursing knowledge about communication patients undergoing mechanical ventilation in both study and control groups through the three phases of pretest, posttest1, and posttest2.

4. Discussion

Part I: The demographical data of study sample

The result that presented in table (1) show the equivalence of the study sample (both group) in their demographical characteristics as most of participants 16(48.5%) and 19(63.3%) in both groups were between (24-26) years old, 18(54.5%), 19(63.3%) were male, most of them bachelor holder, related to their marital status 17(51.5%) in the control group were married, while 17(56.7%) in the interventional group were single. These results agree with a study which carried out on critical care unit nurses in st. John's medical college hospital the results revealed that the majority of the nurses (92%) between (22-29) years old (Thomas, D, 2006). Ayuso-Murillo, D., et al., 2017, found that most of the nurses who work in the critical care unit were female (89.6%), who find that female nurses have well skills than male when it comes to listening to professional and personal problems, in addition to making good environment that promotes exchange, participation and communication. Na'el K, A., & Mohammed, W. K, 2019, found that most of the ICU nurses who provide direct care for patients in Al- Hilla teaching hospital were male, because of long time duty and overload hardworking made the female nurses prefer to work in the general units.

The result in table (1) go a line with the study which carried out to evaluate the effects of humanistic knowledge and communication skills on professional quality of life in the critical care unit nurses, the study found out that most of the nurses (77.6%) were single and (77.7%) were with bachelor education (CHO, G. Y., et al., 2020).

Part two: Employment information

Table (2) showed that the most of the control group members 17(51.5%) were with (2-5) years of experience in the ICU, 22(73.3%) of interventional group were within one and less than one year of experience in the ICU. All the participant(both group)

didn't attend any specific course related to communication skill with unconscious patients, 30(90.9%), 23(76.7%).

This finding go a line with Dawood, H. A., & Hassan, H. S., 2018, who demonstrated in their quoin 2 experimental study that the years of nurses experience in the ICU was (62.5%) and (56%) were between (1-5) years in both group. While most nurses in the CCU recorded between (1-5) years of experience.

Most of hospitals prefer to assign your nursing to work in the critical care unit related to working overload and multiple responsibilities which can be carried by them easily.

Results in table (3 shows that the pretest of both study group recorded unsatisfied level of knowledge related to communicating skills with unconscious patients as (1.37 _+ 0.254), (1.39 _+ 0.160). During the posttest the control group shows knowledge deficit, while the nurses who attend the educational program session (interventional group) recorded significant improvement in their two posttest as(1.87_+0.154) and (1.86_+ 0.167). This indicated that the effectiveness of the content which presented in the educational program related to communication strategies which can be used for.

Ebi is a nursing student who works at a hospital committed to education. She views therapeutic communication as her responsibility and attempts to perform her duties, but she finds it extremely difficult to communicate with unconscious patients. She believes that patients should be left alone, despite her clinical training, because they are unconscious and cannot hear her compassionate behavior. Therefore, she rarely speaks with patients, and since they do not respond to her questions and greetings, she will no longer communicate with unconscious patients. She performs her duties with solely stress-free patients (Victor Obosinde Adika, 2021). Most of the healthcare providers who provide direct care to the unconscious patient believe that the patient loss all their sense for this reason communication discontinued and become poor.

Artificial ventilation considers one of the most tool used in the critical care unit, which act as un effective factor upon the patient physical and psychological aspect, for this reason communication in this situation is critical of the patient to maintain his comfortably and security feeling. Table (4) shows that the pretest of both study group recorded unsatisfied level of knowledge related to communication with patients under artificial ventilation as (1.26 _+ 0.181), (1.30 _+ 0.197). During the posttest the control group shows the same level of knowledge, while the nurses who attend the educational program session recorded significant improvement through their two posttest as(1.76_+0.206) and (1.74_+ 0.216).this results indicated clearly the effectiveness of the educational session which presented for the interventional group members, the scientific content play as a positive factor to enhance nurses knowledge regarding communication strategies which may be used during their day- work with patients undergoing artificial ventilation supported .

According to Momennasab, M., et al., 2019, they revealed that challenges in communicating and understanding the patients, the nurses avoided contact with mechanically ventilated patients. the nurses avoid to contact with difficult and critical patient, there are many factors that make the nurses to avoid the communication with patient such as lack of communication training skill, no present of communication aid, and heavy workload. The important factors that pushed intubated patients to communicate were their basic physical needs, pain, and discomfort.

Because of the link to mechanical ventilation (MV), patient- nurse communication is limited during the critical phase, and the therapeutic effort is focused on saving lives. Implementing communication skills training enhances clinical performance while also lowering patient stress and anxiety (Espinoza-Caifil M, et al., 2021).

According to Langlume S, et al. 2017, the finding revealed that when "assess the ability of families of critically ill patients and the critical care team caring for the patient to accurately communicate and identify patient complaints" found insomnia, pain, difficulty to speaking, thirst, existence of the endotracheal tube play as the most common symptoms during this period. Because of the workload, lack of time, and communication tools, so the patient is rated as unsatisfactory related to communication.

5. Conclusion

Most of the participant in the both groups recorded unsatisfied level of knowledge in pretest. Overall nurses' knowledge for the participants (both group) recorded unsatisfactory level for all communication skill domains through their pre- test. While significant differences found among interventional group members through the first and second post- test, the content of the education program act as a positive factor to improve the knowledge of nurses regarding to communication with patient undergoing mechanical ventilation.

6. Recommendation

1. Special instructional booklets prepared to increase nurses' knowledge regarding communication skills with patient undergoing mechanical ventilation.
2. Continuous educational sessions should be established to enhance nurses' knowledge toward communication patient undergoing mechanical ventilation to provide optimal care for the patient and lover his/ her family members.

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