

Knowledge of Nurses Regarding Transfer of Critically Ill Surgical Patients in Three University Hospitals in Khartoum State 2017

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Abstract

The Nurses play an important role in transfer of critically ill Surgical Patients. The transport process itself is associated with a risk of physiological deterioration and adverse events. Critically ill surgical patients in particular commonly require such transfers and are at high risk of complications. These processes need accurate nurses' knowledge and skills.

Objective

The present study aimed to assess the nurses' knowledge regarding Transfer of critically ill Surgical Patients in three University Hospitals in Khartoum State, 2017.

Methods

This is a descriptive cross sectional hospital based study with objective of evaluating nurses' knowledge regarding Transfer of critically ill Surgical Patients. The study sample involved one hundred and seventy three nurses in three university hospitals in Khartoum state in the year 2017. Successfully surveyed using both a questionnaire and check list. Data was performed using descriptive statistic of central tendency. The data analyzed using Statistical Packages for Social Sciences (Version 23).

Results

Knowledge level of the participants was found to be poor in the majority of them (63.6%), and good in (36.4%). The overall correct knowledge of the nurses about transfer of critically ill surgical patients was found to be significantly associated with higher qualifications, and training (P value=0.002).

Conclusion

It can be concluded that the level of knowledge was poor among the studied group resulting in improper knowledge.

The study recommended that there should be an in-service training and special educational programs targeting nurses to improved nurse's knowledge.

Introduction

The critically ill surgical patient is a complex person in complex environment. The nursing care of critically ill surgical patient is challenging, identifying the individual patient response, to illness as well as to treatment. The nurse who monitors the patient continuously needs to have sound knowledge, skill and careful judgment. Follow it essential to systematic approach in assessing, planning, implementing and evaluating the care provided to the patient. The nurse requires having broad knowledge of sciences, pathophysiology and interpersonal relations. The considerable improvements in intensive care surgery due to technological advances have led to, in terms of treatment aspects as well as diagnostic techniques. Despite the current sophistication of intensive care units, neither all the necessary care nor all appropriate investigations can be offered at the bedside; hence intrahospital transportation is inevitable. Intrahospital transportation refers to transportation of patients within the hospital. Critically ill surgical patients are transported to alternate locations to obtain additional care, whether technical or procedural that is not available at the existing location. Provision of this additional care may require patient transport to a diagnostic department, operating room or specialized care unit within the hospital. Inter and Intrahospital transportation of critically ill surgical patients is associated with significant complications. In order to reduce overall risk to the patient, such transports should be well organized efficient and accompanied by proper monitoring, equipments and personnel. Protocols and guidelines for patient transfers should be utilized universally across all healthcare facilities. The transfer of critically ill surgical patients is not without risk and protocols to guide the transfer of critically ill patients from the Intensive Care Society (ICS) and the Association of Anesthetists of Great Britain and Ireland (AAGBI)

exist. Adverse events commonly occur during inter-hospital transfer of critically ill patients. A prospective audit from the Netherlands reported adverse events occurred in 34% of transfers, of these adverse events 70% were thought to be avoidable. In the United Kingdom 22% of patients were transferred for non-clinical reasons such as the unavailability of a staffed critical care bed at the referring hospital. The recorded critical incident rate of 15%. This study aimed to study nurses' knowledge regarding transfer of critically ill surgical patients in three University Hospitals [1,2].

Methods

This was a descriptive cross sectional hospital based study conducted in three University Hospitals in Khartoum State includes; Soba University Hospital, Ribat University Hospital and Bashair Teaching Hospital. The study was conducted in 2017. Critical care surgical nurses who were working in the university hospitals in Khartoum state with at least one year experience were taken as the target population of the study. The sample size participated in the study (n=173).convince sample. Soba university hospital (77 nurses), bashair teaching hospital (49 nurses) and ribat teaching hospital (64 nurses). Nurses with Diploma, Bachelor Degree (BSC) and Master Science of Nursing (MSN) work in critical care surgical department. Data was collected through a structured face to face Interview. Data was processed and analyzed using the Statistical Packages for Social Sciences SPSS software program (Version 23). Tables and figures were presented by using excel 2007. Data was performed using descriptive and inferential statistics as follow. Descriptive statistic of central tendency was used to obtain the mean standard deviation and the frequency [3-5].

Results

The study was performed at three University Hospitals in Khartoum State during 2017-2020. Data was in the form of questionnaire filled by participants in knowledge, experience and practice. Collected total number of nurses participated in the study was 173 participants. In terms of socio-demographic characteristics, the majority of participants were male 135 (78%). Mean age of participants was (33 ± .76) years. Most of the participants 41% aged between 31-40 years 33% were in the range of 20-30 years. Regarding qualification it was varied from diploma to master degree. Most of participants have diploma (53.8%) followed by Bachelor (43.3%) and the minority holding master degree (2.9%). More than one third (41%) of the participants had 5-10 years experience as shown in table.1. As shown in table 2 the majority of the participants (77%) had no role in training course for transfer of critically ill surgical patients while only 23% had a role. The majority (72.5%) of participants who trained on transfer ill critical surgical patients had good knowledge scores (Table 3). Those who trained on transfer of critically ill patients 71.4% of them had bachelor, 20.6% had diploma and 8% had master degree as indicated in table 4. Only 30.1% of the participants knew the nature of illness as a factors affecting safety of critically ill surgical patients transfer (Table 5). The knowledge score of the participant regarding the effect of transfer of critically ill surgical on patient health indicates that

24.9% were aware and the majorities (77.1%) were not aware (Table 6). There is nearly complete lack of awareness in the studied group about mandatories of transfer of critically ill surgical patients (Table 7). The overall knowledge was good among only 36.4% and 63.6% was poor (Figure1) [6].

Figure1: The overall total knowledge level of the participants about transfer of critically ill surgical patients. n=173

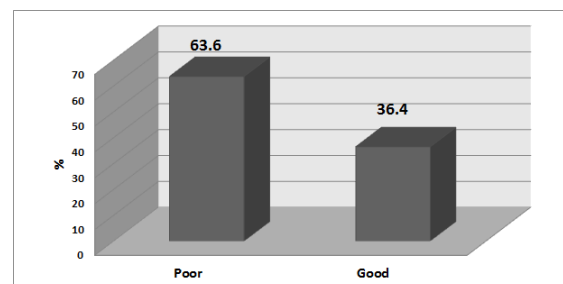


Table1: Distribution of socio-demographic characteristics of the participants (n = 173)

Characteristics	No.	%
Age		
20-30 years	57	32.9
31-40 years	71	41
> 40 years	45	26
Gender		
Male	135	78
Female	38	22
Education		
Diploma	93	53.8
Bachelor	75	43.3
Master	5	2.9
Experience		
< 5 years	43	24.9
5-10 years	71	41
> 10 years	59	34.1

Table2: Distribution of the participants according to their knowledge regarding the factors affecting safety of critically ill surgical patients transfer (n=173)

Factor s	Incorrec t		Correc t		Mean	± SD
	No.	%	No.	%		
Nature of illness	121	70	52	30.1	0.3	0.46

Urgency	125	72.3	48	27.7	0.28	0.45
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Table3: Distribution of the participants according to their knowledge regarding the effect of transfer on critically ill surgical patient's health (n=173)

Effects	Incorrect		Correct		Mean	± SD
	No.	%	No.	%		
Desaturation	132	76.3	41	23.7	0.24	0.43
Increase ICP during deceleration	136	78.6	37	21.4	0.21	0.41
Acceleration lead to hypotension	132	76.3	41	23.7	0.24	0.43
Aspiration during acceleration	130	75.1	43	24.9	0.25	0.43
Hypothermia during transfer	136	78.6	37	21.4	0.21	0.41
Hypoglycemia	134	77.5	39	22.5	0.23	0.42

Table4: Distribution of the participants according to their knowledge regarding the components of systemic approach for patient's transfer (n=173).

Components	Incorrect		Correct		Mean	SD
	No.	%	No.	%		
Assessment (blood pressure, respiratory rate, temperature, pulse, and history)	142	82.1	31	17.9	0.18	0.38
Communication	128	74	45	26	0.26	0.44
Preparation and packaging	124	71.7	49	29.3	0.28	0.45

Table5: Distribution of the participants according to their knowledge regarding the Transfer mandates includes. n = 173

Item	NO		Yes		Partial	Mean	SD	
	No.	%	No.	%				
Decision taken by senior consultant.	130		90.9	13	9.1	40	0.09	0.29
Discussion with patient's relatives.	131		94.2	8	5.8	34	0.06	0.23
Written informed consent (Reason).	128		95.5	6	4.5	39	0.04	0.21
Direct communication with the receiver.	118		84.3	22	15.7	33	0.16	0.37

Table6: Distribution of the participants according to their knowledge about ABCD check before transfer n=173

Items	Not done		Done	Not	Mean	SD	
	No.	%	No.	%	Always		
1- ABCD checked. A- Airway considers ETT.	105	80.8	25	19.2	43	0.19	0.4
B- breathing adequate ventilation.	115	92	10	8	48	0.08	0.27
Optimize ABG, chest drain, pneumothorax.							

C-circulation two wide IV cannulas, hemorrhage controlled cross-matched blood	124	95.4	6	4.6	43	0.05	0.21
D-Disability Glasgow coma scale administration of any sedative or paralytic agent Blanket and investigation.	125	83.3	25	16.7	23	0.17	0.37

Table7: Distribution of the participants according to their knowledge regarding the Transfer mandatories application.

Item	Not Done		Done	Not always	Mean	SD
	No.	%	No.	%		
Decision taken by senior consultant.	130	90.9	13	9.1	40	0.09 0.29
Discussion with patient's relatives.	131	94.2	8	5.8	34	0.06 0.23
Written informed consent (Reason).	128	95.5	6	4.5	39	0.04 0.21
Direct	118	84.3	22	15.7	33	0.16 0.37

communication with the receiver.								
Average	127		91	12	9	37	0.1	0.3

Discussion

There is plenty of observed data showing that transfers of critically ill surgical patients in Sudan are poorly performed. This study is a trial to explore the reasons behind. The study assessed participant's qualification, knowledge and practice. Transfer is often necessary to provide a higher-level care for critically ill patients or allow specialized investigations when such facilities are not available at the referring centre. The transfers number is likely to increase because of supply-demand imbalances. Recognition that centralization of specialist care is associated with reduced mortality rates might generate a new stream of transfers. A study conducted in the USA suggested that the lives of 4,000 patients might have been saved in a year had they been transferred to another, better qualified hospital [7].

Other study finding showed that the decision to transfer a patient to another hospital is made after an assessment of the potential risks and benefits to the patient. Indications for interhospital transfer include the need for specialist investigation or intervention, or ongoing support not provided in the referring hospital.

The main reasons for transfer of critically ill surgical patients in this study were the need for specialized department in most of patients, and unavailability of beds. It is often necessary to provide a higher-level care for critically ill patients or allow specialized investigations when such facilities are not available at the referring center [8,9].

Similar finding indicated that from a total of 573 patients were transferred due to a shortage of ICU beds, and 8106 patients were not transferred. Crude 90-day mortality was higher in patients transferred due to a shortage of beds (189 patients (33%) vs 2188 patients (27%), $p = 0.002$).

In the United Kingdom. Twenty two percent of patients were transferred for non-clinical reasons such as the unavailability of a staffed critical care bed at the referring hospital.

The most reasons for the problems of transfer is lack of staff's knowledge about the principles of patient transfer and this gap can influence on the quality of nurses' performance in this matter. This study assessed participants in knowledge, experience and practice. Their qualification varied from diploma to master degree. The majority had poor knowledge, only less than a third of the participants were involved in patient transfer training program they showed good knowledge. Interestingly they were diploma and bachelor qualified. The series of Stevenson et al. have shown that the level of knowledge of nurses and quality of transfer processes are undesirable and

often, both the physicians and nurses are not trained for this task or their training has not been sufficient [10].

However the evidence shows that training for relatively simple procedures leads to quality improvement, it seems logical this applies also to more complex procedures such as transfer of critically ill patients. Transfer teams should be trained before taking responsibility for patient care during transport and a significant determinant of quality of care during transport is the training of the attendant.

In the absence of guidelines and lack of awareness with it, was only one nurse accompanying the transferred patient in nearly all of the transferred patients in this study and rarely accompanied by another one from the medical team.

Definitely the nurses' role in transfer of patients is crucially important. Existing guidelines recommend that, presence of two persons is required for the transfer of critically ill patients. One of these two persons must be a qualified nurse with advanced cardiopulmonary resuscitation (CPR) certificate and experience of working in emergency situations. However, transport guidelines appeared during the 1990s, a review published in 1999 still reported adverse events in up to 70% of transports. This led the authors to urge intensivists to follow guidelines concerning logistical organization, personnel, equipment and monitoring during transport. Newer guidelines continued to emphasize the principles concerning personnel, organization and equipment. Nonetheless, high rates of incidents continued to be published, many of which appeared to be avoidable, and associated with non adherence to the guidelines.

With the exception of only three participants, none of the studied group performed assessment of the transferred patients before transfer. That was expected as the highest correct knowledge score on the components of systemic approach for transfer was only scored by small number of the participants. The ABCD check was not done for most of patients due to the fact that, only few of participants scored the highest score in air way management as part of ABCD check before transfer. The assessment of the patient, stabilization of patient's clinical condition, preparing the patient prior to the transfer, continuous monitoring of patient's condition during the transfer and maintaining patient's safety and his/her dignity and privacy are some of the important responsibilities of nurses during patient transfer [11].

In line study indicated that a thorough, but brief, airway assessment is essential to manage patients requiring advanced airway management. Indications for the use of airway management are: (1) failure to oxygenate; (2) failure to ventilate; (3) failure to maintain a patent airway. The modality of airway management primarily depends on the cause and severity of the patient condition, but is also subject to factors such as environment and clinician skill.

Moreover, some of the causes of adverse events during patient transfer include incorrect clinical judgment and identification of problems, being in hurry, lack of attention, failure of protocols, and lack of proper preparation of equipment or patient. One of the reasons for these problems is

lack of knowledge about the principles of patient transfer and this gap can influence on the quality of nurses' performance in this matter.

These issues can include insufficiencies in training and inconsistent or inadequate education for those providing care. Transfer of knowledge is critical in most areas specifically where new employees or temporary help is used.

In Australia 2014, a number of 9 hundred contributing factors identified, (46%) were system-based and (54%) human-based. Communication problems, inadequate protocols, in-servicing training and equipment were prominent equipment-related incidents.

A prospective audit from the Netherlands reported adverse events occurred in 34% of transfers, of these adverse events 70% were thought to be avoidable. Many of these adverse events related to equipment failure, inadequate preparation, and poor documentation and communication.

Conclusion

This study concluded that, the knowledge of nurses regarding Transfer of critically ill Surgical Patients were poor in majority of them despite their certificates of qualifications. That might reflect the defects in the educational process. However, the lack of the organized continuous training program is another factor explaining their poor practice. Education programs based on the evidence –based guidelines, will significantly improve the knowledge and ultimately the practice of nurses. In addition to adequate continuous training program should be designed for the nurses in transfer of critically ill surgical patients.

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