

Assessment of Patients' Perception of Mechanical Ventilation (Endotracheal Tube) and Intensive Care Unit Post Cardiac Surgery

Khalida Alwan Mansour ¹, Bassima Amir Naji ², Bushra Khairullah Khanjar³

¹ Prof., Dr., Department of Adult Nursing, College of Nursing, University of Baghdad, Iraq, ² Assist. Lecture, University of Baghdad/ Nursing College/ Iraq, ³ Lecture Dr., Department of Adult Nursing, College of Nursing, University of Baghdad, Iraq

Abstract

Background: Treatment and mechanical ventilation in the intensive care unit may get a variety of physical and psychological discomfort for patients.

Objectives: To assess the perception of patients about the intensive care unit (ICU) and stressful experiences about mechanical ventilation in ICU. And identify an association between patient perceptions with demographic characteristics.

Methodology: a descriptive study (cross-sectional study) for the purposive sample of 80 patients of post-cardiac surgery (hospitalized) in Ibn Albetar and Iraqi Center of Heart Disease (Gaze AL-Hariri hospital). Data were analyzed to achieve the goal of the study have been a questionnaire prepared according to the literature review, it is composed of 3 parts, **first part** demographic data and, the information related ICU, **the second parts**, stressful experiences of adult patients who received mechanical ventilation (Endotracheal tube) (ETT) at ICU, and **third parts**, patient perception related to the environment at ICU. The validity of the questionnaire through a number of experts in the college of the nursing university in Baghdad.

Results: The study showed (47.5%) of the sample was within (50-59) years, 25% of them from primary school or less, (85%) of them the residence area was urban, the study showed that the high percentage (62.5%) of the cardiac surgery patient was the moderate level of stressful experience during mechanical ventilation (Endotracheal tube) (ETT) at intensive car unite (ICU) while only (10%) of patients with a low-level of stressful experiences. The results also showed the majority (90 %) of patients with a moderate level of the perception of patients of the intensive care unit.

Conclusions: The majority of cardiac surgery patients where moderate levels of perception of mechanical ventilation (Endotracheal tube) (ETT) and of the ICU.

Keywords: *intensive care unit; mechanical ventilation; endotracheal tube; patient stress experiences.*

Introduction

The Intensive Care Unit ICUs are the environments a generate stress, where patients experience disruption of sleep-wake patterns, lack of contact with family and friends, in addition to the several clinical procedures that cause patients to experience different types of physical and psychological discomfort. The most stressed events for the family members were fearful of the clinical state of the patient, length of hospital stay, and

witness the patients in a coma. ^{5,11}. Many studies and literatures assess the stressful factors in the ICU with the application of environmental stressors .questionnaire (ESQ), with 50 items, reporting satisfactory reliability. Convergent validity was confirmed by a strong magnitude correlation between the total score of the version of the ESQ and the generic stress measurement score. Therefore, the Brazilian version of the ESQ is a reliable and valid instrument to assess stressors in

the ICU. ^{5,11,15}. Vesz et al, (2013) conducted a study that evaluated functional and psychological aspects immediately after ICU discharge showed high incidence rates of depression and anxiety symptoms and sleep disorders in patients hospitalized in ICUs for 72 hours or more. [Siffleet](#) et al, (2015) ¹⁴ conform in their study to understand what environmental elements optimized the maintenance of emotional wellbeing methods: In order to improve the patients' comfort and well-being during and after a stay in the intensive care unit (ICU). The findings indicate an increase in the understanding of the environmental elements that can optimize the emotional wellbeing of intensive care nurses. These findings will assist in the development of strategies to retain nurses in the ICU area. A study that evaluated and compare stressors identified by patients of a coronary intensive care unit with those perceived by patients of a general postoperative intensive care unit. The result showed the perception of major stressors and the total stress score was similar between patients in the coronary intensive care and general postoperative intensive care units. (Dias, et al. 2015) ⁶. Since pain is multidimensional and subjective, however, many adult patients in the ICU cannot self-report pain as a result of an altered level of consciousness, the administration of sedative agents, and/or mechanical ventilation. The lack of self-reporting makes assessing pain in critically ill patients a challenge for nurses, who should consider the use of alternatives such as observational pain assessment tools. There are few studies that assess patient perception in ICU This study were designed to answer the question, how do post-cardiac surgery patients describe their perception in the ICU and what. Specific experiences cause patients stress

Methodology

A descriptive-analytic study design study was carried out at Al-Iraqi Center for Cardiac Disease (Gazee Al-Harare Hospital) and Ibn Albetar the cardiac hospital, the present study started from 21 January 2017 to 1st June 2018. A non- probability (purposive) sample of 80 adults patients who discharge from the surgical cardiac ICU to the surgical ward these patients who met the following criteria such as adult (male and female), received mechanical ventilation and oriented to person and place while they are in the ICU and they can communicate with the researcher

The study instrument: For the purpose of data collection, a questionnaire was used, which consists of four parts, first Part concerning the demographic data form that included (age, gender, marital status, level of education, and occupational status) and the information related ICU which includes (the type of surgery, period of mechanical ventilation, and period of ICU stay). Second Parts: concerning the stressful experiences of adult patients who received mechanical ventilation (Endotracheal tube) (ETT) in the ICU. A questionnaire of the patients' perception of experiences in ICU was measured by a questionnaire adopted from (Pennock et al, 1994; Rotondi et al, 2000). The questionnaire consisted of (8 items that demonstrate the stressful experiences of ICU patients who received mechanical ventilation. The first item scored by, four-level Likert scale as no pain (1), pain at its least (2), pain on average (3), pain at its worst (4). The remaining (7) items scored by, four-level Likert scale as never (1), rarely (2) sometime (3) always (4). Third part: concerning the perception of patients about ICU. The researcher adopted and developed an environmental stressor questionnaire (ESQ). It was used by (Cochran & Ganong, 1998 and Cornock, 1998) and it revises by the Brazilian version by (Rosa, et al 2010). The questionnaire translated into the Arabic language by the researcher. In this study the scale used is 4 = "always" to 1 = "never", thus making a range of (50-200) total score. The highest score of perception of the stressful experiences of adult patients who received mechanical ventilation (Endotracheal tube) (ETT) in the ICU and the perception of patient of ICU obtained, the high level of perception

Data were collected by interviewers from patients after their discharge from an ICU when they were in the surgical ward by using the questionnaire format, and revision the client chart was also used to obtain information concerning the sociodemographic characteristics (e.g., age, gender, and education), the type of operation, period of the endotracheal tube and the period of staying in ICU.

The content validity of the instrument was established through a panel of (10) experts their experience in their specialist with a mean (20.25) year. The determination of reliability of the items of the scales was based upon the internal consistency of the questionnaire was assessed by calculating Cronbach s' Coefficient alpha. The data

were analyzed through the use of SPSS (Statistical process for Social Sciences) version 20 And Excel packages. Descriptive data analysis

Results

Table (1): Demographical Characteristic of the Sample. n=80

Variables	Groups	Frequency	Percentage
Age	30-39	4	5.0
	40 -49	24	30.0
	50 -59	38	47.5
	60 -69	14	17.5
Gender	Male	54	67.5
	Female	26	32.5
Marital status	Married	58	72.5
	Single	6	7.5
	Widowed	10	12.5
	Divorced	6	7.5
Educational status	Read and write	24	30.0
	Intermediate school	16	20.0
	Secondary school	20	25.0
	Institute graduate	10	12.5
	College graduate	10	12.5
Occupational status	Housewife	22	27.5
	Non employment	2	2.5
	Government employment	34	42.5
	Self-employee	22	27.5

Table (1) indicated that a higher percentage (47.5%) of the sample at (50-59) years old, 67.5% were males, (72.5%) married, and (50%) of the patient their education were secondary school and less. Regard occupational status the table shows that the (42.5%) of patients were governmentally employee

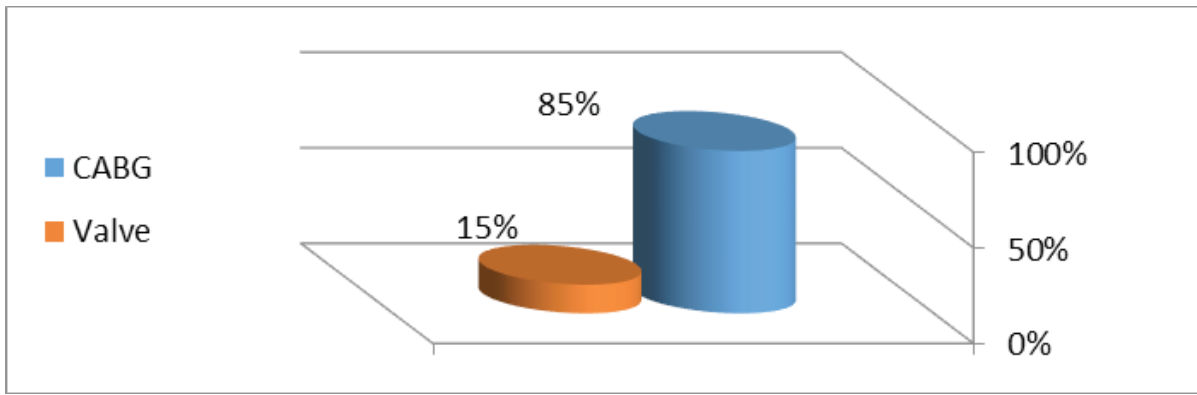


Figure (1) type of surgery

This figure (1) revealed that the (85%) of patient have Coronary Artery Bypass Surgery (CABG) and (15%) of them have valve replacement surgery

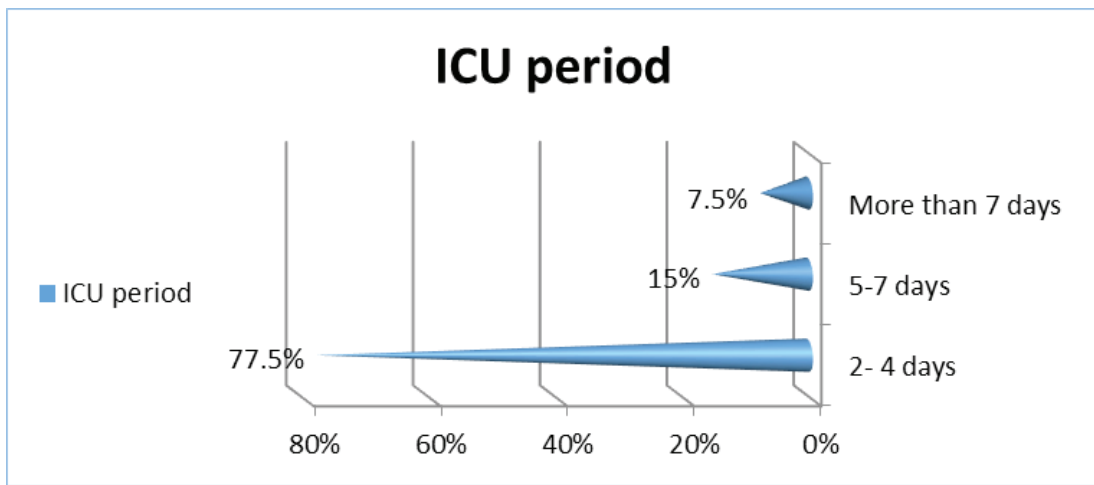


Figure (2) Intensive care unit period

This figure (2) revealed that the (77.4%) of patients the intensive care unit (ICU) period was (2-4 days) flowed (15%) the period (5-7 days) and (7.5%) of patients the period more than 7 days

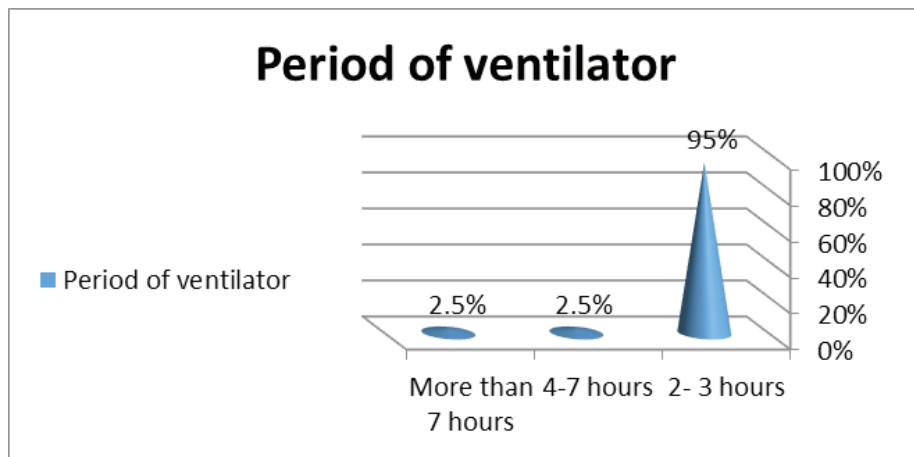


Figure (2) Intensive care unit period

This figure (3) revealed that the (95.0 %) of patients the mechanical ventilation (Endotracheal tube) (ETT) at ICU period was (2-3 hours) and (2.5%) of patients the period mechanical ventilation was equally for both (4-7 hours) and more than 7 hours.

Table (2): Mean, Standard Deviation related to the level of stressful experiences of adult patients during (Endotracheal tube) (ETT) at the intensive care unit (ICU).

stressful experiences of adult patients with (Endotracheal tube) (ETT) at ICU	Mean of score	Std. D	level
1- To what extent felt pain when you are on artificial ventilation	3.12	.82	H
2- Remember not being able to speak	2.57	.87	M
3- Remember pain or discomfort associated with ETT.	2.97	.99	M
4- Remember feeling choked by ETT,	2.27	1.01	M
5- Remembered feeling anxiety about the ETT	2.85	1.12	M
6- Remember ETT interference with sleep,	2.82	.98	M
7 Remember not getting enough air from the ETT	3.57	.87	H
8- Remember difficulty breathing After ETT Removed	1.80	1.04	L

ICU= Intensive Care Unit, (1 to 1.9) = Low stressful experiences of the patient’s about Endotracheal tube, (2 to 3) = M= moderate stressful experiences of the patient’s about Endotracheal tube, (3.1 to 4) = high stressful experiences of the patient’s about Endotracheal tube, less than 62.5= Very low stressful experiences of the patient’s about Endotracheal tube

The stress perception of patients about mechanical ventilation is given in table (2). The table revealed that the perception of the stressor perception about ETT for 80 patients after discharge from ICU, ranging between low and high-grade levels. Most of the items were moderate except the patient “felt pain when he was on artificial ventilation” and “not getting enough air from the ETT ”were high, while the low level of experience in a “remember difficulty breathing After ETT Removed”

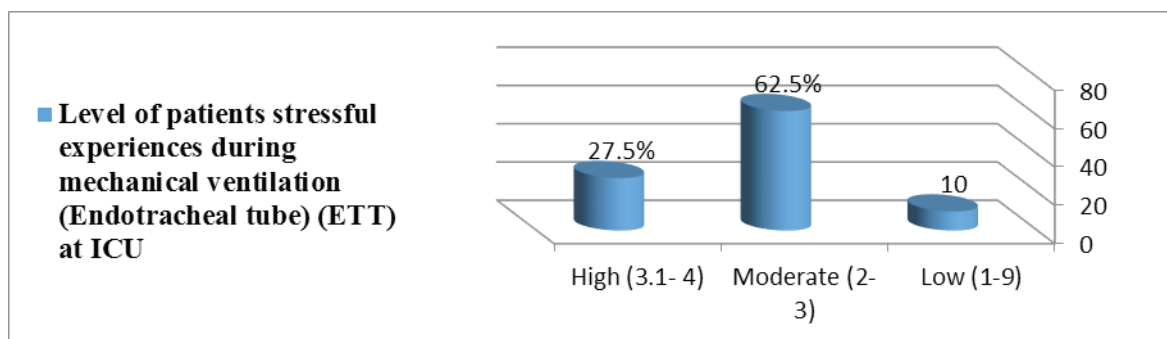


Figure (4) Level of stressful experiences of adult patients during mechanical ventilation (Endotracheal tube) (ETT) at ICU

The figure (4) revealed that the high percentage (62.5%) of patient with moderate level of stressful experience followed (27.5%) of patients with high level and (10%) of them low level of stressful experiences of adult patients during mechanical ventilation (Endotracheal tube) (ETT) at ICU

The stress perception about ICU for 80 patients after discharge from the ICU, ranging between low and high-grade levels. Twenty-one items out of fifty items the response of stress perception at intensive care unit were moderate while nine items out of fifty items was response high-stress perception about ICU. And only seven items the patients was response low-stress perception about ICU

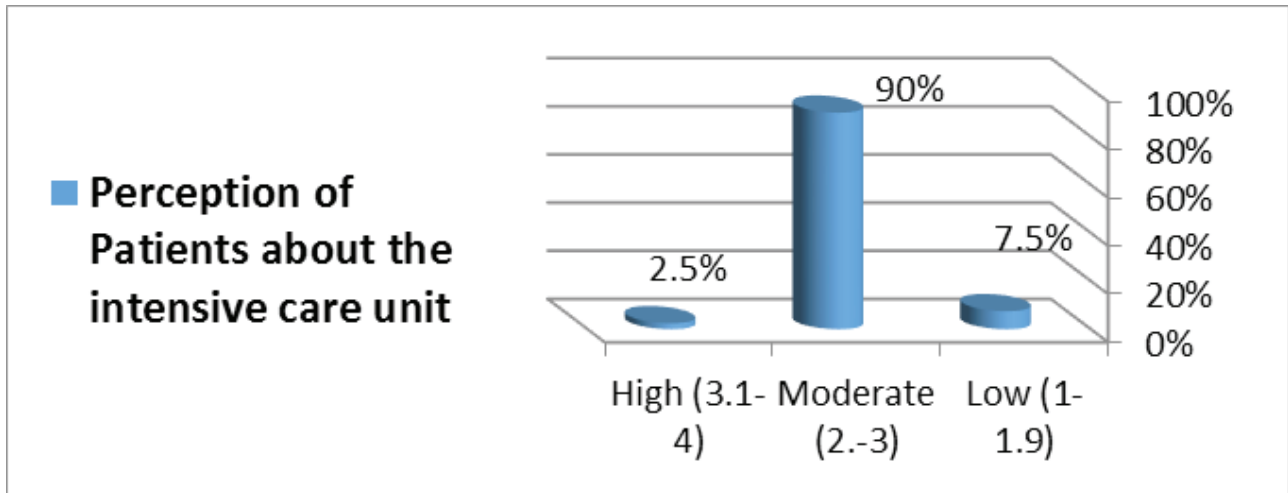


Figure (5) level of the perception of patient about ICU by use the environmental stressor questionnaire

The figure (5) revealed that the majority (90 %) of patient with moderate level of of the perception of patient about ICU followed (2.5%) of patients with high level and only (7.5%) of them low level of the perception of patient about ICU

Table (3): Association between Demographic Characteristic and the information related ICU with the stressful experiences of adult patients with (Endotracheal tube) (ETT) and Perception of Patients about the intensive care unit

Perception Variables		stressful experiences of adult patients with (Endotracheal tube) (ETT) at ICU		Perception of Patients about the intensive care unit	
		test	p-value & Sig	test	p-value & Sig
Demographic Characteristic	Gender	t= -356	.724 (NS)	t=-822	.421 (NS)
	Age	F=3.360	0.028 (S)	F=0.680	.570 (NS)
	Marital status	F=2.388	.070 (NS)	F=.387	.817 (NS)
	Level of education	F=1.762	.159 (NS)	F=1.285	.295(NS)
the information related ICU	Type of surgery	t=0.680	0.570 (NS)	t=3.380	0.029 (S)
	Period of ICU	F=0.187	.830 (NS)	F=0.437	.649 (NS)
	Period of ventilator	F=.477	.625(NS)	F=1.820	.176 (NS)

t= t test. Independent Samples Test, F= one way ANOVA

The result of the table (3) revealed that the total score demographic characteristics of patients' stressful experiences about mechanical ventilation (Endotracheal tube) (ETT) at ICU and perception of patients about the intensive care unit was no statistical differences with demographic characteristic except the age with patient perception about mechanical ventilation there is a statistical significant association at p -value ≤ 0.05 levels.

The table also shows that the total score of the patients' stressful experiences about mechanical ventilation in ICU was no statistical difference with the type of surgery. While the total score of patients' perception of the intensive care unit was statistically significant differences, p -value ≤ 0.05 levels. Concerning period of the ICU and period of the ventilator the results show no statistically significant association.

Discussion of the Results

Most ICU patients respond or perceive stressors in the same ways related to the several clinical procedures that cause patients to experience different types of physical and psychological discomfort.

The present study reported that less than half of the study sample within age group (50-59) years and one-third within the age group (40-49) years and less than twenty percent of the patient within the age group (60-69), most of the patients were Male and, marital status and their education was read and write (primary school) and have a governmental job. Concerning the type of surgery majority of patients CABG surgery, the majority of the patient has been on a mechanical ventilation was 2-3 days. And most of the patients has been in ICU were 2-4 days. These results are consistent with the study conducted by Dias et al., (2015). Has reported that the mean ages of patients were 53.60 ± 17.47 years in the general postoperative intensive care unit.

Though the data analysis shows no statistically significant difference between demographic characteristics of the patient with stressful experiences about mechanical ventilation (Endotracheal tube) (ETT) at ICU and perception of patients about the intensive care unit except the age with patient perception about mechanical ventilation there is a statistically significant association p -value ≤ 0.05 levels. Concerning

the stressful experiences about mechanical ventilation at ICU was no statistical differences with type of surgery. While the perception of patients about the intensive care unit was statistical significant differences at p -value ≤ 0.05 levels. Related period of ICU and period of ventilator the results shows no statistically significant association.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the Department of Adult Nursing and all experiments were carried out in accordance with approved guidelines.

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