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EFFECTIVENESS OF COMMUNICATION BOARD AMONG MECHANICALLY VENTILATED PATIENTS IN TERMS OF SATISFACTION IN THE ICUS

Anaesthesiology

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ABSTRACT

Introduction: Now a days, uses of Positive pressure Mechanical ventilator has been exponentially increased in ICUs around the world. Mechanical Ventilation is one of the common intervention seen in the ICUs. Communicating with Mechanically Ventilated Patient is challenging for doctors, nursing staff, technicians and patients' families. A Communication Board can serve as a bridge between patients and health care team and help them to give holistic care to intubated patients. The overall aim of the study was to evaluate the effectiveness of Communication Board in terms of Satisfaction among Mechanically Ventilated Patients in ICUs. **Method:** This study adopted Quantitative Research Approach with post test only design and conducted in three ICUs of selected hospital. 50 patients who fulfilled the criteria were randomly allocated into the Experiment and Comparison group. The Communication Board was used on Experiment group of Mechanically Ventilated Patients during their Weaning Period. **Results:** The results shows the statistical significance difference in Experiment and Comparison group of Mechanically Ventilated Patients in terms of Satisfaction after use of Communication Board ($t= 16.151$, $p<0.001$). The association between Satisfaction with Socio-Demographic and Clinical Characteristics of Mechanically Ventilated Patients were not statistically significant. **Conclusion:** Communication Board is found to be effective in enhancing the Satisfaction among Mechanically Ventilated Patient.

KEYWORDS

Mecahnically Ventilated Patient, Satisfaction, Communication Board

INTRODUCTION

Now a days, uses of Positive pressure Mechanical ventilator has been exponentially increased in ICUs around the world. Mechanical Ventilation is one of the common intervention seen in the ICUs. (Hosseini, Valized-Hasanloei & Feizi, 2018). In Mechanically Ventilated patients, communication ability may be further impaired due to sedation, fatigue, delirium or neurological disease (Happ et al., 2011).

In ICU, mostly verbal communication or face-to-face communication is the preferred mode of communication. Mostly health care providers in the ICU usually do not properly communicate with patients because of the busy environment of the ICU which leads to communication barrier between patient and health care providers in the ICU (Happ et al., 2011).

Communication is very important aspect for Mechanically Ventilated patients to express their actual needs. If their needs are not fully understood or misinterpreted by others, it really became source of stressful experiences and psychoemotional distress among them. (MacAulay et al, 2002). Now a days, many Anaesthetist preferred use of less sedation in Mechanically Ventilated patients, which cause easily awaking after off sedation.

It increases the number of patients potentially able to communicate while on Mechanical Ventilator and awake in ICU. So it increase the therapeutic demand of communication in ICU (Hoorn, Elbers, Girbes & Tuinman, 2016).

Effective communication with Mechanically Ventilated patients is also very essential, so that their basic physiological, psychological needs, wishes, emotion and feeling can be conveyed to health care providers and relatives (Grossbach, Stranberg & Chlan, 2011).

Problem Statement

A study to evaluate the effectiveness of Communication Board in terms of Satisfaction among Mechanically Ventilated patients in the ICUs

Objectives of the Study

To assess the effectiveness of Communication Board in terms of Satisfaction between Experiment and Comparison group of Mechanically Ventilated Patients.

MATERIALAND METHODS

This study adopted Quantitative Approach with post test only design and conducted in three ICUs . The patients who satisfied the inclusion and exclusion criteria were randomly allocated for the study as Experiment and Comparison group. Fifty patients (25 in Experiment & 25 in Comparison group) were randomly allocated as per Randomization Chart

Criteria for Sample Selection

The subjects were selected based on the inclusion and exclusion criteria.

Inclusion Criteria

- Patients above age group of 18 years.
- Patient on weaning mode ·
- Patient who were Hemodynamic stable
- Patients with normal GCS (15)
- Patient with sedation score 1 according to Modified Ramsay Sedation Scale

Exclusion Criteria

- Patients who were Mechanically Ventilated with tracheostomy tube.
- Those patients who were not willing to participate.
- Period of extubation longer than 72 hours

Tools for data collection

Socio-Demographic Characteristic, Clinical Characteristic and Structured Satisfaction used was used.

Satisfaction Tool-

The Structured Satisfaction tool has two section. First section related to Satisfaction among Mechanically Ventilated Patients related to care received during Mechanical Ventilation in weaning period with 17 items in three domains i.e. Technical- Professional, Interpersonal and Communication.

Each statement was assessed on a five point Likert-type measure ranging from “Strongly Disagree” (0) to “Strongly Agree” (4). The negative sentences were assessed in reverse. In this Maximum Possible score for this tool is 68 and Minimum score is 0.

Second section had Satisfaction related to uses of communication board consist of eight items, among them six items were on 5-point Likert scale and two were open ended items related to Suggestion for improving Communication during Mechanical Ventilation and Suggestion related to improving Communication Board. Highest Scoring for this section was 24 and lowest score was 0.

The higher the satisfaction score means higher patient satisfaction among Mechanically Ventilated patients during weaning period The Content Validity Index (CVI) of satisfaction scale ranged from 0.98 to 1. Cronbach'alpha of satisfaction scale was 0.80 which was in accepted

range (0.78 - 1.0). So, the tool were valid and reliable.

Method of data collection

Written permission and approval for conducting the study was obtained from Institution Review Board consisting of the Scientific Review Committee and Ethical Committee of College of Nursing of ILBS, New Delhi. The tool was made in English and Hindi language and validated by 9 experts.

Data collection process was done from October 2018 to December 2018. Firstly Participant Information Sheet was given and explained to Patient's relative and Informed consent taken. When Mechanically Ventilated Patients were on off sedation, level of Consciousness and alertness was assessed. Patient who had MRSS score 1 and GCS score 15 were included in the study. Duration of weaning was vary among intubated patients. In comparison group routine care and routine method of communication was used entire weaning period and Communication Board was given to Experiment group. After extubation from Mechanical Ventilator, with in 72 hours data was collected from patients using Structured Satisfaction Scale.

Analysis And Interpretation Of Data

Analysis of the data was done after coding all the data in the master data sheet. The data were tabulated, analyzed and interpreted using appropriate descriptive and inferential statistics using SPSS Version 22.0

Section 1 Socio-Demographic Characteristics of Mechanically Ventilated Patients

This section dealt with the Socio-Demographic Characteristics of Mechanically Ventilated Patients . Chi- square test ($p > 0.05$) computed was found not significant. It showed that both group were homogenous in terms of their socio- demographic characteristics as shown in figure 1

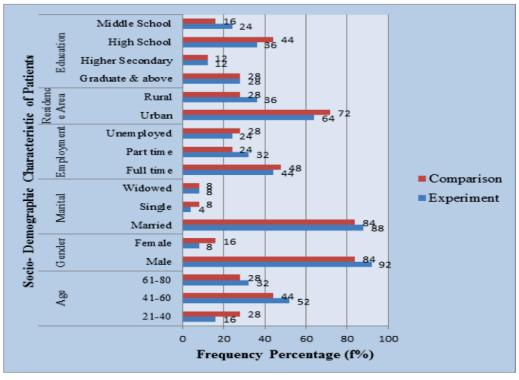

Figure 1. Horizontal bar chart showing frequency and percentage distribution of Socio-Demographic Characteristic of Patients of Experiment and Comparison Group

Section 1.2 Clinical Characteristics of the Mechanical Ventilated Patients

This section dealt with the Clinical Characteristics of the Mechanically Ventilated Patients of Experiment and Comparison group as shown in table 1.

Table 1 *Frequency and percentage distribution of the Clinical Characteristics of Patients in Experiment and Comparison group*

$n_1+n_2=25+25$

Clinical Characteristic	Experiment group	Comparison group	$\chi 2$	df	p value
	f (%)	f (%)			
Medical Diagnosis			0.424	3	0.935
CLD Ethanol	8 (32.0)	10 (40.0)			
CLD NASH	6 (24.0)	12 (24.0)			
ACLF	5 (20.0)	4 (16.0)			
Other	6 (24.0)	5 (20.0)			
Reason for intubation			5.175	3	0.159
Altered Sensorium	8 (32.0)	6 (24.0)			
Surgery	6 (24.0)	12 (48.0)			
Shock	7 (28.0)	2 (8.0)			
Respiratory Distress	4 (16.0)	5 (20.0)			
Duration of Mechanical Ventilation (in hours)					
1-50	8 (32.0)	12 (48.0)	2.029	3	0.566
51-100	10 (40.0)	7 (28.0)			
101-150	5 (20.0)	3 (12.0)			
151-200	2 (8.0)	3 (12.0)			
Mode of Ventilation Pressure Support Ventilation	11 (44.0)	11 (44.0)	0.571	2	0.751
Spontaneous Breathing Trial	6 (24.0)	8 (32.0)			
T-Piece Trial	8 (32.0)	6 (24)			
Duration of weaning (in hours)			0.459	2	0.795
1-5	10 (40.0)	8 (32.0)			
6-10	13 (52.0)	14 (56.0)			
11-15	2 (8.0)	3 (12.0)			

$p > 0.05$.

Chi square test was used to test the homogeneity of groups and found not significant. Hence both group were homogenous in terms of their clinical characteristics.

Section II Comparison of Satisfaction between Experiment and Comparison group of Mechanically Ventilated Patients after using Communication Board

Table 2 *Mean, Standard Deviation, Mean Difference, t and p value of Satisfaction score between Experiment and Comparison group of Patients after use of Communication Board*

$n_1+n_2=25+25$

Domain of Satisfaction	Experimental group (Mean ±SD)	Comparison group (Mean ±SD)	MD	P value	df	P value
Technical-Professional	13.04±0.978	9.00±1.871	4.040	9.569	48	0.000**
Interpersonal	15.92±1.256	8.52±3.097	7.400	11.071	48	0.000**
Communication	24.00±1.979	10.56±3.117	14.240	11.074	48	0.000**
Overall	53.76±3.166	28.04± 7.306	25.720	16.151	48	0.000**

$p<0.001$; ** Highly Significant

An Independent 't' test was used and found significant difference between Experiment and Comparison group in all domains of Satisfaction i.e. Technical-Profession, Interpersonal, Communication and Overall Satisfaction related to uses of Communication Board .So, Communication Board was effective in increasing Satisfaction among Experiment group than Comparison group

DISCUSSION

The effectiveness of Communication Board was assessed on domain-wise i.e. Technical Profession ($p= 0.000$, $t = 9.569$), Interpersonal ($p= 0.000$, $t = 11.071$), and Communication aspect ($p= 0.000$, $t = 11.071$), as well as overall Satisfaction related to uses of Communication Board ($p= 0.000$, $t = 16.151$). It was found that the Communication Board was effective in enhancing Satisfaction of Mechanically Ventilated Patients. For the support of present study's finding, the similar studies was done by Das (2016) revealed that mean of Satisfaction of Experiment group (46.4) was higher than the Comparison group (32.9) after using communication board which was found statistically significant ($t = 7$, $p < 0.05$).

Limitation-

The study was limited to the sample size of 50, the finding can not be generalized. Limited time was available for data collection. Few literature available related to Communication Board.

Recommendations

A similar study can be conducted with larger sample for generalization of study findings. A Comparative Study can be conducted using Picture Communication Board and other Communication methods such as electronic devices can be conducted.

CONCLUSION

The Communication Board was effective in enhancing Satisfaction among Mechanically Ventilated Patients in ICUs.

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Conflict of interest The authors have no conflict of interest to declare.

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