



A QUASI-EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF COMMUNICATION BOARD ON THE LEVEL OF COMMUNICATION SATISFACTION AMONG MECHANICALLY VENTILATED PATIENTS ADMITTED IN INTENSIVE CARE UNITS OF GGSMCH, FARIDKOT, PUNJAB.

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ABSTRACT

INTRODUCTION: Patients with physical and sensory disabilities, such as deafness and blindness and patient with endotracheal intubation and mechanical ventilation have been shown to face considerable barriers when communicating with health care professionals. One of the major concern of mechanical ventilation patients is to communicate their needs as the most common stressful experience in mechanically ventilated patients is being non vocal. Patients with communication disabilities are already at increased risk for depression and other co-morbidities, as communication is one of the most basic, yet important life skills. It is a means to understand others and ourselves. So to bridge communication gaps between patient and health care professionals communication chart/communication board is need to be designed. The study was undertaken to assess the effectiveness of communication board on the level of satisfaction among mechanically ventilated patients admitted in intensive care units of GGSMCH, Faridkot, Punjab.

AIM: Aim of the study was to assess the effectiveness of communication board on the level of satisfaction among mechanically ventilated patients admitted in intensive care units of GGSMCH, Faridkot, Punjab.

MATERIAL & METHODS: Quasi-experimental approach with post-test only design was used. Conceptual framework for the study was based on Modified King's goal attainment theory. Through convenient sampling, 30 subjects were selected in experimental and 30 in conventional group. Subjects in experimental group had

received intervention on 3 /5 day based on discharge .A standardized self structured rating tool to assess the level of satisfaction socio-demographic data ,clinical profile and the level of satisfaction of mechanically ventilated patients were developed by keeping in mind the objectives of the study, reviewing literature and discussion with guide and co-guide. Descriptive statistics and independent t-test were used to analysis of data.

RESULTS: The result revealed that In experimental group the mean post-test score was 44.77 ± 5.367 whereas in conventional group the mean score was 28.83 ± 2.547 . Mean percentage of experimental group was 74.61% and the mean percentage of the conventional group was 48.06%. The independent t-test (t value computed 14.690) was found to be statistically significant at $p\text{-value} < 0.05$ for effectiveness of communication board on level of satisfaction in experimental group.

CONCLUSION: Communication board is highly effective on the level of communication satisfaction among mechanically ventilated patients admitted in intensive care units of GGSMC&H Faridkot Punjab.

RECOMMENDATIONS: Communication board should be used among mechanically ventilated patients to improve communication and level of satisfaction and helps the nurses to understand patient's need in order to render patient centered care.

KEY WORDS: Communication board , level of satisfaction , mechanically ventilated patients, intensive care unit.

BACKGROUND

Greek philosopher and polymath Aristotle (384- 322 B.C) "Father of Biology" defines communication is means of persuasion to influence the other so that so that desired effect is achieved. Communication is derived from Greek word "Communis" means "to make common".⁴

Communication is an interactive behavior between people and it involves the transmission of message from one or more persons to another. The communication falls into one of two categories with purposes to inform or call to action.² Human being influence other primarily through communication. Reading, writing, listening, speaking, viewing images, and creating images are all acts of communication. There are as well many more subtle communication activities that may be conscious or unconscious, such as expression, gesture, "body language" and nonverbal sounds.²

Patients with physical and sensory disabilities, such as deafness and blindness and patient with endotracheal intubation and mechanical ventilation have been shown to face considerable barriers when communicating with health care professionals.³ Patients on ventilator have reported that their inability to communicate results in unrecognized pain, feeling of loss of control and depersonalization, anxiety, fear, distress, and frustration. There are many studies discussing the difficulties and stresses mechanically ventilated patients experience in the intensive care unit (ICU) when trying to communicate with doctors and nurses.

Intensive care unit (ICUs), also called critical care or intensive therapy departments, are sections with in a hospital that look after patients whose condition are life threatening and need constant, close monitoring and support from equipment and medication to keep normal functioning going. They have higher level of staffing, specialist monitoring and treatment equipment and medication to keep normal body functioning going. Mechanical ventilation (MV) is a commonly used mode of support in the intensive care unit.^{4,5}

The incidence of MV for adults grew from 942/100000 population in 2016 to 1976/10000 in 2019 showing an increase of 40 % ($p < .05$).⁷ Mechanically ventilated patients are unable to express their feelings and needs through verbal communication because the endotracheal tubes running through their vocal cords make speech impossible, contributing to their frustration and anxiety.¹⁴

The lack of interventions that especially address impaired verbal communication in orally intubated, critically ill patients can result in feelings of powerlessness, both for the patients and for those providing care. Effective communication requires the use of some feedback. Communication is always reciprocal in nature. Nurses play a pivotal role in understanding and knowing the needs on MV patients. Communication is significant aspect of nursing practice. Nurses who communicate effectively are better able to initiate change that promotes health, establish a trusting relationship with the client and support persons. Effective communication is essential for the establishment of the nurse-client relationship. There are few identified barriers to effective communication such as mechanical ventilation/tracheostomy, ET tube, etc. When a nurse has difficulty understanding the message that a non-vocal individual is trying to convey, quality of care can suffer.³ When the patient's efforts to communicate go in vain, the communication process becomes one sided. In such a situation, feedback from patients becomes limited.

Various Augmentative and alternative communication strategies such as lip reading, communication board, writing, and hand gestures have been proved beneficial for patients not able to communicate due to intubation. Therefore, it is important to develop alternative methods of communicating for the patient, who is receiving mechanical ventilation. Appel -Hardin (1984) was the first author to illustrate a sample communication board in the literature. The author suggested that the content of the board include alphabet letters, words describing basic needs (i.e., pain and thirst), pictures of body parts, and names of people (i.e., spouse, family member, and doctor). Publishing a sample communication board provided clinicians with the content and format of a board from the nurses' perspective. However, this published board was not tested for its ability to meet patients' communication needs.¹⁵ Communication board can improve an effective to be mean for mechanically ventilated patients to communicate with the doctors and nurses. It is often a nurse who is the key provider of information to patients, relatives and other members of multi - disciplinary team.

Nursing care today emphasizes a holistic, scientific approach, made possible by adequate communication, and it is nurse's calling to ensure such patient care.⁵ By using of these communicating boards,

the nurse will be able to identify the patient's limitation and needs. This type of communicating board can help the patient to improve patient's satisfaction and communication pattern.

MATERIAL AND METHODS

A quantitative research approach design was used for the study. The present study was conducted at department of intensive care units of GGSMCH Faridkot Punjab . Total sample size was 60 mechanically ventilated patients, who met the inclusion criteria .

The tools used for the study are as follows:

In order to assess the effectiveness of communication board on the level of communication satisfaction among mechanically ventilated patients admitted in intensive care units of GGSMCH Faridkot Punjab. **TOOL-1** Socio-Demographic data sheet , **TOOL-2** Clinical profile of patient, **TOOL-3** (Self-Structured rating scale to assess level of communication satisfaction) was developed by the researcher , keeping in mind the objectives of the study reviewing theoretical sources, previous studies, internet and through discussion with guide and co-guide.

Description of tool

Tool – 1: Socio-Demographic data sheet

- It consist of 8 items to obtain socio demographic information i.e., age, gender, marital status, religion, type of family, area of residence ,family income, educational status.

Tool -2: Clinical profile

- This tool consists of 4 items for obtaining information regarding disease and treatment of the patients i.e. ,: diagnosis, duration of mechanical ventilation, length of ICU stay, previous history of mechanical ventilation.

Tool –3: A rating scale to assess the level of communication satisfaction among mechanically ventilated patients

- A semi structured interview schedule was used to assess the level of communication satisfaction among mechanically ventilated patients. The number of questions was 15. The maximum score for level of satisfaction was 60 and the minimum score considered to be 15. It is 4 point likert scale which constituted of 15 items.

ETHICAL CONSIDERATIONS

Ethical approval clearance was taken from the research and ethical committee of University College of nursing, and Baba Farid University of Health Sciences, Faridkot, Punjab for the study to be conducted. Apart from this, written informed consent was taken from each study subject in the form of participant information sheet. Written informed consent was taken by each participant after informing them about study and its objectives The Confidentiality & privacy of the study subjects were maintained. The study is conducted only for research purpose.

STATISTICAL METHODS

The data will be analyzed by using both descriptive and inferential statistics. The data related to demographic variables was analyzed by using descriptive measures (frequency, percentage) and the level of communication satisfaction among mechanically ventilated patients was analyzed by using descriptive statistics (mean, standard deviation). The effectiveness of communication board on level of satisfaction among mechanically ventilated patients was analyzed by t –test.

SECTION A

❖ Distribution of mechanically ventilated patients based on the demographic variables.

Table 1: Data related to demographic variables of mechanically ventilated patients.

N = 60

SL.NO.	DEMOGRAPHIC VARIABLES	GROUPS			
		EXPERIMENTAL n =30		CONVENTIONAL n = 30	
		F	%	f	%
1	Age :				
	a) 18 – 37	5	16.7	9	30.0
	b) 38 – 57	15	50.0	12	40.0
	c) 58 – 80	10	33.3	9	30.0
2	Gender :				
	a) Male	13	43.3	11	36.7
	b) Female	17	56.7	19	63.3
3	Marital Status :				
	a) Married	23	76.7	24	80.0
	b) Unmarried	7	23.3	6	20.0
4.	Religion:				
	a) Sikhism	20	66.7	25	83.3
	b) Hinduism	8	26.7	5	16.7
	c) Islam	0	0	0	0
	d) Others	2	6.6	0	0
5	Type of family :				
	a) Nuclear family	6	20.0	13	43.3
	b) Joint family	24	80.0	17	56.7

6	Area of residence :				
	a) Urban	13	43.3	10	33.3
	b) Rural	17	56.7	20	66.7
7	Family income per month in rupees :				
	a) 10,000 - 30,000	30.0	100.0	29	96.7
	b) 30.001 - 50,000	0.0	0.0	0	0
	c) 50.001 - 70,000	0.0	0.0	1	3.3
	d) More than 70,000	0.0	0.0	0	0
8	Educational Status:				
	a) Illiterate	14	46.7	16	53.3
	b) Primary School Education	4	13.3	5	16.7
	c) Secondary School Education	3	10.0	1	3.3
	High School Education	8	26.7	8	26.7
	d) Graduate	1	3.3	0	0
	e) Above Graduate	0	0	0	0

Table 1 describes the distribution of mechanically ventilated patients in experimental and conventional group according to age, gender, marital status, religion .type of family .area of residence .family income per month, education.

- Out of 30 subjects in the experimental group, 50% belong to 38-57 years of age, 33.3% between 58 -80 years of age and 16.7% belong to 18-37, whereas 40% subjects in control group belong to 38-57 years of age, 30% between 58 -80 years of age and 30% belong to 18-37.
- Considering the gender of patient in experimental group 43.3 % were males and 56.7% were females and in conventional group 36.7% were males and 63.3% were females.
- Regarding the marital status in experimental group 23.3 % of the patients were married and 76.7 % were unmarried and in conventional group 80 % of the patients were married and 20 % were unmarried.

- According to religion 66.7% of patients belong to Sikhism ,26.7 % belong to Hinduism , and 6.6 % belong to other religion and in conventional group 83.3% of patients belong to Sikhism ,16.7 % belong to Hinduism.
- Regarding the type of family in experimental group 80 % of the patients were in joint family and 20% were in nuclear family and in conventional group 56.7% of the patients were in joint family and 43.4 % were in nuclear family.
- According to area of residence in experimental group 56.7 % belongs to rural area and 43.3 % belongs to urban area and in conventional group 66.75 belongs to rural area and 33.3 % belongs to urban area .
- As per family income in experimental group 100% of patients had 10,000- 30,000 family income and in conventional group 96.7 % of patients had 10,000- 30,000 family income and 3.3 % of patients had 50,001- 70,000 family income.
- Regarding the educational status in experimental group 46.7% of patients were illiterate ,26.7 % of patients had high school education ,13.3 % of patients had primary education and 3.3% of patients were graduate and in conventional group 53.3 % of patients were illiterate ,26.7 % of patients had high school education ,16.7 % of patients had primary education and 3.35 of patients had secondary education.

SECTION B

- ❖ Distribution of mechanically ventilated patients based on clinical profile.

Table 2: Frequency and percentage distribution of mechanically ventilated patients according to their clinical profile

N = 60

S.NO.	CLINICAL PROFILE	GROUPS			
		EXPERIMENTAL GROUP (n=30)		CONVENTIONAL GROUP (n=30)	
		f	%	F	%
1.	DIAGNOSIS				
	a) Cardiovascular diseases	5	16.7	4	13.3
	b) Pulmonary diseases	7	23.3	7	23.3
	c) Renal diseases	4	13.3	0	0
	d) Gastrointestinal diseases	3	10.1	4	13.3
	e) Neurological diseases	10	33.3	15	50.1

	f) Musculoskeletal diseases	0	0	0	0
	g) Surgical resection	1	3.3	0	0
	h) Others	0	0	0	0
2.	DURATION ON MECHANICAL VENTILATION				
	a) 2 days	9	30.0	14	46.7
	b) 3-6 days	13	43.3	10	33.3
	c) 7- 10 days	7	23.3	6	20.0
	d) > 10 days	1	3.3	0	0
3.	LENGTH OF ICU STAY				
	a) 2 days	1	3.3	1	3.3
	b) 4 days	8	26.7	12	40.0
	c) 8 days	4	13.3	6	20.0
	d) 10 days	16	53.3	10	33.4
	e) 12 days	1	3.3	1	3.3
4.	PREVIOUS HISTORY OF MECHANICAL VENTILATION				
	a) YES	3	10.0	1	3.3
	b) NO	27	90.0	29	96.7

Table 2 describes the distribution of mechanically ventilated patients in experimental and conventional groups according to clinical profile.

- The above table represents that, in experimental group 10 (33.3 %) patients were diagnosed with neurological diseases, 7(23.3 %) had pulmonary diseases , 5(16.7%) cardiovascular diseases, 4(13.3 %) had renal diseases , 3 (10.1%) had gastrointestinal disease , 1(3.3 %) had surgical resection and in conventional group 15 (50.1 %) patients were diagnosed with neurological diseases , 7(23.3 %) had pulmonary diseases , 5(16.7%) cardiovascular diseases , 4(13.3 %) had renal diseases, 3 (10.1%) had gastrointestinal disease , 1(3.3 %) had surgical resection.
- Regarding duration of mechanical ventilation 13(43.3%) were intubated for 3-6 days ,9(30.0%) were intubated for 2 days , 7(23.3 %) were intubated for 7-10 days, 1 (3.3%) were intubated for >10 days and in

- conventional group 14(46.7%) were intubated for 2 days ,10(33.3%) were intubated for 3-6 days , 6(20.0 %) were intubated for 7-10 days where as in control group 22(73.33%) .
- According to length of ICU stay in the experimental group 16(53.3%) patients were having 10 days of ICU stay ,8(26.7%) patients were having 4 days ICU stay ,4(13.3%) were having 8 days ICU stay ,1(3.3%) were having 2 and 12 days ICU stay whereas in conventional group 12(40%) patients were having 4 days of ICU stay ,10 (33.4%) patients were having 10 days ICU stay ,6(20.0%) were having 8 days ICU stay ,1(3.3%) were having 2 and 12 days ICU stay .
 - Related to previous history of mechanical ventilation in experimental group 27(90%) had no previous history and 3(10%) had previous history of mechanical ventilation where as in conventional group 29(96.7%) had no previous history and 1(3.3%) had previous history of mechanical ventilation.

SECTION C

- ❖ Distribution of mechanically ventilated patients according to their post- test level of satisfaction in experimental and conventional group.

Table 3: showing data on distribution of mechanically ventilated patients according to their post- test level of satisfaction in experimental and conventional group.

n=30

GROUPS	LEVEL OF SATISFACTION	FREQUENCY	PERCENTAGE
XPERIMENTAL GROUP	Satisfied	30	100%
	Not satisfied	0	0%
CONVENTIONAL GROUP	Satisfied	3	10%
	Not satisfied	27	90%

- The above table shows that distribution of samples according to their post level of satisfaction among mechanically ventilated patients .100% (30) of patients in experimental group were highly satisfied and majority of the patients 90 %(27) were not satisfied in the conventional group. This reveals that experimental group patients were highly satisfied than conventional group patients.

SECTION D

- ❖ Effectiveness of communication board on level of satisfaction among mechanically ventilated patients in experimental and control group.

Table 4: showing data on distribution of mean, SD, t-value in order to assess the effectiveness of communication board on level of satisfaction among mechanically ventilated patients in experimental and conventional group.

N = 60

GROUP	n	Mean	Std. Deviation	Std. Error Mean	“t” value	df	p. value
Experimental group	30	44.77	5.367	.960	14.690	58	.000
Conventional group	30	8.83	2.547	.465			

Significant at $p \leq 0.05$ level. $df = 58$, table value 2.01.

The above table represents the overall posttest level of satisfaction of experimental and conventional group patients. In experimental group the mean posttest score was 44.77 ± 5.367 whereas in control group the mean score was 28.83 ± 2.547 . The calculated t value 14.690 was greater than table value (2.01) at $p \leq 0.05$ level of significance, hence the research hypothesis **H1** was retained. This shows that communication board was effective on level of satisfaction among mechanically ventilated patients in experimental group.

SECTION E

- ❖ Comparison on level of satisfaction according to the post test among mechanically ventilated patients in experimental and conventional group.

Table 5: showing data on comparison of mean, standard deviation on level of satisfaction among mechanically ventilated patients in experimental and conventional group.

N=60

GROUPS	MAXIMUM SCORE	MEAN	MEDIAN	MODE	SD	MEAN %	DIFFERENCE IN MEAN %
Experimental group	60	44.77	46.00	41	5.367	74.61%	26.55%
Control group	60	28.83	29.00	29	2.547	48.06%	

The above table represents the overall posttest level of satisfaction in experimental and conventional group patients.

In experimental group the mean post-test score was 44.77 ± 5.367 whereas in conventional group the mean score was 28.83 ± 2.547 . Mean percentage of experimental group was 74.61% and the mean percentage of the conventional group was 48.06%. The difference in mean % was 26.55 %. It can be inferred that the level of satisfaction was significantly higher in experimental group when compared to conventional group.

DISCUSSION

MAJOR FINDINGS OF THE STUDY

❖ Related To Demographic Variables :

- Out of 30 subjects in the experimental group, 50% belong to 38-57 years of age ,33.3% between 58 -80 years of age and 16.7% belong to 18-37 , whereas 40% subjects in conventional group belong to 38-57 years of age , 30% between 58 -80 years of age and 30% belong to 18-37.
- Considering the gender of patient in experimental group 43.3 % are the males and 56.7% are females and in conventional group 36.7% are males and 63.3% are females.
- Regarding the marital status in experimental group 23.3 % of the patients were married and 76.7 % were unmarried and in conventional group 80 % of the patients were married and 20 % were unmarried.
- According to religion 66.7% of patients belong to Sikhism, 26.7 % belong to Hinduism , and 6.6 % belong to other religion and in conventional group 83.3% of patients belong to Sikhism ,16.7 % belong to Hinduism.
- Regarding the type of family in experimental group 80 % of the patients were in joint family and 20% were in nuclear family and in conventional group 56.7% of the patients were in joint family and 43.4 % were in nuclear family.
- According to area of residence in experimental group 56.7 % belongs to rural area and 43.3 % belongs to urban area and in conventional group 66.75 belongs to rural area and 33,3 % belongs to urban area .
- As per family income in experimental group 100% of patients had 10,000- 30,000 family income and in conventional group 96.7 % of patients had 10,000- 30,000 family income and 3.3 % of patients had 50,001- 70,000 family income.
- Regarding the educational status in experimental group 46.7% of patients were illiterate ,26.7 % of patients had high school education ,13.3 % of patients had primary education and 3.3% of patients were graduate and in conventional group 53.3 % of patients were illiterate ,26.7 % of patients had high school education ,16.7 % of patients had primary education and 3.35 of patients had secondary education.

❖ Related To Clinical Profile :

- In experimental group 10 (33.3 %) patients were diagnosed with neurological diseases , 7(23.3 %) had pulmonary diseases , 5(16.7%) cardiovascular diseases , 4(13.3 %) had renal diseases , 3 (10.1%) had gastrointestinal disease , 1(3.3 %) had surgical resection and in conventional group 15 (50.1 %) patients were diagnosed with neurological diseases , 7(23.3 %) had pulmonary diseases , 5(16.7%) cardiovascular diseases , 4 (13.3 %) had renal diseases , 3 (10.1%) had gastrointestinal disease , 1(3.3 %) had surgical resection.
- Regarding duration of mechanical ventilation 13(43.3%) were intubated for 3-6 days ,9(30.0%) were intubated for 2 days , 7(23.3 %) were intubated for 7-10 days, 1 (3.3%) were intubated for >10 days and in conventional group 14(46.7%) were intubated for 2 days ,10(33.3%) were intubated for 3-6 days, 6(20.0 %) were intubated for 7-10 days where as in control group 22(73.33%).
- According to length of ICU stay in the experimental group 16(53.3%) patients were having 10 days of ICU stay ,8(26.7%) patients were having 4 days ICU stay ,4(13.3%) were having 8 days ICU stay ,1(3.3%) were having 2 and 12 days ICU stay whereas in conventional group 12(40%) patients were having 4 days of ICU stay ,10 (33.4%) patients were having 10 days ICU stay ,6(20.0%) were having 8 days ICU stay ,1(3.3%) were having 2 and 12 days ICU stay.
- Related to previous history of mechanical ventilation in experimental group 27(90%) had no previous history and 3(10%) had previous history of mechanical ventilation where as in conventional group 29(96.7%) had no previous history and 1(3.3%) had previous history of mechanical ventilation.

❖ Related To Objective 1:

❖ Distribution of mechanically ventilated patients according to their post- test level of satisfaction in experimental and conventional group:

- 100% (30) of patients in experimental group were highly satisfied and majority of the patients 90 %(27) were not satisfied in the conventional group. This reveals that experimental group patients were highly satisfied than conventional group patients.

❖ Assessment of effectiveness of communication board on level of satisfaction among mechanically ventilated patients in experimental and conventional group:

- In experimental group the mean post-test score was 44.77 ± 5.367 whereas in control group the mean score was 28.83 ± 2.547 . The calculated t value 14.690 was greater than table value (2.01) at $p \leq 0.05$ level of significance, hence the research hypothesis **H1** was retained. This shows that communication board was effective on level of satisfaction among mechanically ventilated patients in experimental group.

❖ Assessment of comparison of level of satisfaction among mechanically ventilated patients in experimental and conventional group:

- In experimental group the mean post-test score was 44.77 ± 5.367 whereas in conventional group the mean score was 28.83 ± 2.547 . Mean percentage of experimental group was 74.61% and the mean percentage of the conventional group was 48.06%. The difference in mean % was 26.55 %. It can be inferred that the level of satisfaction was significantly higher in experimental group when compared to conventional group.

DISCUSSION IN REFERENCE TO OTHER SIMILAR STUDIES

In this section discussion in references to other studies has been discussed given by other investigators.

- In other studies explained below, the mechanically ventilated patients had poor communication pattern and thus frustrated.

Marte –Marie Wallander, et al (2018)¹⁶ conducted observational study with a phenomenological – hermeneutical approach to assess communication pattern among mechanically ventilated patients admitted in ICU, Medical hospital, Norwegian Europe. Total of 10 patients were selected by simple random technique. The results revealed that in total all situation patients attempted to attract the attention of others on their own initiative in order to express themselves.

Oettde Rodrigus (2018)¹⁷ conducted a quasi -experimental study to assess the efficacy of communication of verbally non communicative patients in MICU, Medical hospital, Mangalore, total sample was 40 was divided into experimental and control group by used non probability purposive sampling. The results showed that in the experimental group, the computed 't' values of communication scores were significant for all components ($p < 0.01$) and in the control group, the computed 't' values were significant only for the general and physiological domains of communication

Sasmita Das, et al (2015)¹⁸ conducted a study on communication pattern and level of satisfaction among 60 mechanically ventilated patients in a multidisciplinary hospital by non-probability purposive sampling technique. The results showed that calculated r value is 0.25 before communication board and 0.29 after using communication board indicates high significant relationship between communication pattern and level of satisfaction of the patients with mechanically ventilator. The findings showed that 60% patients admitted on mechanical ventilator had poor communication pattern and thus frustrated ($p < 0.01$). Independent 't' test was comparing the overall value for independent t test communication (27.38) was significant ($p < 0.01$)

- In the studies explained below, the communication behaviours were strongly influenced by the nurses as translators of information and communication problem.

Khadijeh Gorwin, et al (2019)¹⁹ conducted a Quasi- experimental study to assess the communication skill of nurse to identify communication problem among intubated patients admitted in MICU, hospital of medical

sciences , Iran . 33 nurses and 33 patients were taken by purposive sampling technique .The results revealed that the mean ,standard deviation of communication function and verbal and non-verbal skills of nurses showed a significant difference ($p=0.039$ and $p<0.001$)

Christopher G.slatore,et al (2012)²⁰ conducted a qualitative study to assess the communication by nurses to identity communication problem in ICU of Veterans Affairs hospital in Poland..53 interview with 33 nurses to categorize communication interactions into five patient-centered care domains were taken. The results revealed that the communication behaviors were strongly influenced by the nurses as translators of information and communication problem assessed by nurses were alleviated by interaction properly.

Mary Beth Happ(2011)²¹conducted a descriptive observational study of the non -intervention/usual care cohort from a larger clinical trial of nurse-patient communication in a medical and a cardiothoracic surgical intensive care unit of Europe. Video recorded interactions between 10 randomly selected nurses (5 per unit) and a convenience sample of 30 critically ill adults (15 per unit) who were awake, responsive. The results revealed that the nurses initiated most (86.2%) of the communication exchanges with the use of communication board . Mean rate of completed communication exchange was 2.62 exchanges per minute. Although communication exchanges were generally (>70%) successful. Patients rated 40% of the communication sessions with nurses without the use of communication board was somewhat so difficult.

➤ In the studies explained below , the communication board was effective in experimental group as compared to control group.

Kiran bhardwaj, et al (2019)²² conducted a quasi - experimental study to evaluate the effectiveness of communication board on communication difficulty among mechanically ventilated patients at institute of liver and biliary sciences (ILBS) vasant kunj ,New Delhi . The total of 50 patients were selected randomly into two groups (experimental group and control group) . The results showed that the independent t –test was found significant ($t = -27.855$, $p \text{ value} < 0.001$), it means experimental group of mechanically ventilated patients has significantly less communication difficulty than comparison group.

Seyede-Roghayeh Hosseini, et al (2018)²³ conducted a quasi-experimental study to assess effect of using communication board on ease of communication and anxiety in mechanically ventilated conscious patients admitted in intensive care units. In this study 30 conscious patients undergo mechanical ventilation were enrolled using consecutive sampling method and assigned to experimental ($n=15$) and control ($n= 30$) groups. Findings of the study showed that the communication board was effective improving communication ($t= 9.051$, $p = 0.001$) and frustration ($t=6.604$ $p=0.001$) mechanically ventilated post cardio thoracic surgery patients. There was a statistical significant strong negative correlation ($r= -.543$) between the communication and level of frustration. However after intervention there was significant difference in communication scores between the experimental and control groups and patients anxiety had significantly decreased in the experimental group($z =-2.98$; $p= 0.003$).

Sukhbir kaur, et al (2018)²⁴ conducted a quasi-experimental study to evaluate the effectiveness of communication chart in improving patients satisfaction among conscious intubated patients at AIMMS New Delhi . 30 patients were selected in each experimental group and control group by simple random sampling. The results revealed that the patients satisfaction score was significantly higher in the experimental group and significantly higher number of patients in experimental group i.e.; 97%reported high satisfaction level while 93% of the patients in control group reported moderate satisfaction.

Martelize Gropp , et al (2018)²⁵ conducted a quasi- experimental study to evaluate the effectiveness of using communication board on level of satisfaction among patients admitted in intensive care setting in a semi urban hospital of South Africa .Total of 60 patients were selected in experimental and control group (30 in each group) by simple random sampling .The results showed that the level of satisfaction perceived by study subjects in experimental group was significantly higher than the control group.

Dr.Vandana Pakhide(2018)²⁶conducted a quasi-experimental study to assess the effect of modified communication board on communication ability of post-operative CABG patients at selected hospital Bhopal, Madhya Pradesh, India .The study subjects were 60 post- operative CABG patients, 30 in each group; control group and experimental group selected through purposive sampling .The results concluded that there was significant relation found between modified communication board and communication ability of post-operative CABG patients

Ms Binju Raju ,et al (2018)²⁷ conducted a quasi-experimental study to assess the effectiveness of Self Instructional Module on knowledge regarding the use of communication board in communicating with mechanical ventilated patients admitted in ICU in selected hospitals at Udaipur City ,Rajasthan .Total of 30 patients were selected 15 in each experimental group and control group by simple random sampling technique method. The results revealed that the mean post- test knowledge scores was 26.71 which is greater than the mean pre- test knowledge scores; 17.91 .The enhancement in the knowledge level of respondents is 8.8 indicates gain in knowledge by respondents

Nany Mohammad Erfan,et al (2018)²⁸ conducted quasi-experimental study to assess the effectiveness of use of communication board in communicating with mechanical ventilated patients admitted in cardio ICU at Ain Shams Hospital, Egypt.80 patients were selected by using purposive random sampling method into 2 groups experimental and control group .The results revealed that on the basis of IPSQ 85% of study subjects were satisfied by using communication board compared to 8% of control group with highly statistically significant difference .

MR.Jhon Glitus ,et al (2018)²⁹ conducted a quasi-experimental study to assess the effectiveness of use of communication board in communicating with mechanical ventilated patients admitted in ICU of Deepak Hospital Jalna, Maharashtra. Total of 32 patients were selected 16 in each experimental group and control group by simple random sampling technique method. The results showed that in the experimental group mean value was 73.5 ± 4.5 where as in comparison group the mean value was 65 ± 3.6 with the t vale of 12 which was statistically highly significant at $p < 0.001$ level which showed that the communication board was effective among the patients on mechanical ventilator.

Pramila Gaudel and Jamuna bai(2017)³⁰ conducted a study to assess a effectiveness of communication board of communication and level of satisfaction among mechanically ventilated post cardiothoracic surgery patients. They select two groups one is true experimental and other is control group design. Sample size selected by researcher i.e. 60 through random sampling technique. Findings of the study showed that the communication board was effective improving communication ($t = 9.051$, $p = 0.001$) and frustration ($t = 6.604$, $p = 0.001$) mechanically ventilated post cardio thoracic surgery patients. There was a statistical significant strong negative correlation ($r = -0.543$) between the communication and level of frustration. And there was no significant association between communication and level of frustration ($p = 0.05$) with their selected baseline variables in both the experimental and control group.

Bhawna Arora ,et al(2017)³¹ conducted a quasi –experimental study to assess the effectiveness of visual communication board on satisfaction for communication compromised patients in selected hospitals of New Delhi .Total 60 communication compromised patients 30 in each experimental and control group were selected by using purposive sampling .The results revealed that in experimental group maximum of study subjects i.e.13 (43.33%) were satisfied and only 2(6.6%) were unsatisfied. In control group maximum of the study subjects were unsatisfied i.e.11(36.6%) and only 2(6.67%) were satisfied .The level of satisfaction perceived by study subjects in experimental group was significantly higher than the control group

Rimi S arkar (2017)³² conducted a quasi-experimental study to assess the effectiveness of communication board on communication process among aphasic patients admitted in CCU & ICU of Apollo Main Hospital , Vanagaram , Chennai. Total 60 communication compromised patients 30 in each experimental and control group were selected by using purposive sampling. The results revealed that in post –test: maximum experimental group study subjects i.e.13 (56.67%) were satisfied and in control group maximum of the study subjects were unsatisfied (55.69%)were satisfied .The communication process in the experimental group had high mean score in posttest ($M = 27.03$, $SD = 5.64$) as compared to control group ($M = 10.01$, $SD = 5.08$)

Mrs. Dorwin Das (2016)³³ conducted a quasi-experimental study to assess the effectiveness of communication board on the level of satisfaction of communication pattern among patients on mechanical ventilator .The total sample size was 20 the sample was divided into control and experimental group by used non probability convenience sampling. The findings of the study revealed high significant level of satisfaction

of communication pattern among experimental group ,the unpaired (t test) computed between mean posttest of experimental and control group score computed as 7.00.

Mrs R. Rathi (2014)³⁴ conducted a quasi- experimental to assess the effectiveness of communication board satisfaction among patients on mechanical ventilator at PSG Hospital ,Tamil Nadu .15 patients were selected each in experimental and control group by simple random sampling technique .The results showed that in the experimental group mean value was 83.5 ± 5.5 where as in comparison group the mean value was 65 ± 3.6 with the t vale of 14 which was statistically highly significant at $p < 0.001$ level which showed that the communication board was effective among the patients on mechanical ventilator

Annie (2009)³⁵ conducted a study on the effectiveness of the communication board among mechanically ventilated patients in Apollo hospital ,Chennai.An experimental- Control trail of 60 patients were randomly selected . The results showed that the 73% patients without the use of communication board found their communication process inadequate and 80% were adequate with the use of communication board .The patients with communication board reported higher satisfaction with communication at $p < 0.001$.

Fatma Ati Aslan(2009)³⁶ conducted a quasi -experimental study on effectiveness of communication board among mechanically ventilated patients admitted in selected ICU of Bangalore. Total no. of 72 patient were selected by simple random sampling technique in two group .The results revealed that most of the patients (60%)were found communication board as an effective method of communication

Susan Balandin ,et al (2009)³⁷ conducted a study to assess the effectiveness of communication board on improving the communication among patients with severe acquired communication impairments in selected hospital of Bangalore. Samples consist of 10 patients with no functional speech and who were admitted 12 months before the study. The result revealed that the most of the study subjects (86%) were satisfied with the use of communication board and revealed alleviation of frustration associated with the communication

K. Hemsley, et al (2009)³⁸ conducted a descriptive study on effectiveness of communication board among the patients with severe communication impairment in selected hospital of Chennai. Sample consist of 40 patients selected by purposive sampling technique .The result revealed that the most of the study subjects (92%) were satisfied with the use of communication board and also suggested a need for training nurses in the use of communication board as an effective tool for patients with severe communication impairment.

C.Reed, (2008)³⁹ conducted the study on the role of education and innovative communication tools in improving non-verbal communication among ventilated patients in ICU of Selected Hospital of Tamil Nadu. Sample consist of 80 patients selected by purposive sampling technique into two groups ($n=40$).The results revealed that the pre –intervention assessments reported 60% of mechanically ventilated patients extremely frustrated with their inability to communicate and 75% of nurses perceived their methods and resources to be inadequate. Post –intervention assessment reported 51% of patients preferred the communication board as their

best method compared to other communication aids and basic methods, and 58% of nurses reported the EZ board as the most beneficial method.

Elseiver (2006)⁴⁰ conducted an experimental study effectiveness of the communication board among mechanically ventilated patients in selected ICU of Nigeria .Total of 32 patients were selected by convenience sampling technique in experimental and control group . The results revealed that the communication board was effective in alleviating frustration with the communication

K. S.Dithole, et al (2006)⁴¹conducted a experimental study to assess the effectiveness of communication board and level of satisfaction among ventilated patients of hospital of medicine and health sciences , South Africa . Sample consist of 80 patients selected by convenience sampling technique. The results showed that the pre –intervention assessments reported 70% of mechanically ventilated patients extremely frustrated with their inability to communicate and 75% of nurses perceived their methods and resources to be inadequate. Post – intervention assessment reported 90% of patients preferred the communication board as their best method compared to other communication aids and basic methods, and 83 % of nurses reported that the communication board significantly most beneficial method

Patak(2006)⁴² conducted a study to assess the effectiveness of the communication boards in critical care patients admitted in cardiothoracic ICU, American center ,Los Angeles ,CA,USA .The descriptive approach was used and samples involved 29 critically ill patients. The results revealed that 62 patients reported a high level of frustration in communicating their needs while receiving mechanical ventilation. Patients judged that their perceived level of frustration in communicating their needs would have been significantly lower($p<0.07$)if a communication had been offered .69% of the patients perceived that a communication board would have been helpful, and they also identified specific characteristics and content for a communication board

Stovsky, et al (2006)⁴³ conducted a quasi –experimental design to evaluate the effectiveness of communication board among 80 patients receiving ventilator support after cardiac surgery in Medical hospital of Ukraine .The experimental group $n=40$ was introduced to communication board and control group($n=40$) relied on standard care .The results revealed that in post –test: maximum experimental group study subjects i.e.(59.67%) were satisfied and in control group maximum of the study subjects were unsatisfied (55.69%)were satisfied .The communication process in the experimental group had high mean score in posttest ($M=29.03$, $SD= 5.34$) as compared to control group ($M=15.01$. $SD =5.02$).

Erin et al. (2006)⁴⁴ conducted a pilot study to assess the spiritual ,emotional ,physical and physiological needs of mechanically ventilated patients in SICU via eye tracking and communication boards , division trauma ,emergency unit ,New York, USA.29 patients were selected by purposive sampling technique . It was found that median accuracy of CB (100% (IQR)) for basic needs communication was comparable with that of the ETD (100% (IQR 68.8%-100).

CONCLUSION AND RECOMMENDATION

Study concluded that communication board is highly effective on the level of communication satisfaction in experimental group among mechanically ventilated patients admitted in intensive care units of GGSMCH Faridkot Punjab.

The recommendations of study :

- A similar study can be conducted for a large group.
- A comparative study on communication board and magic slate or alphabets board can be conducted.
- Comparative study can be done on the effectiveness of communication board versus other measures on level of satisfaction mechanically ventilated patients.
- Similar study can be conducted on different population like laryngectomy patients.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

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