

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


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Inability to communicate can be a distressing problem for the patient who may be unable to speak because of the use of the paralyzing drugs or the endotracheal tube. The nursing management of the mechanically ventilated patient is challenging on many levels require acquisition of highly technical skills. Mechanically ventilated patient's having more communication difficulties. Communicating effectively with ventilator-dependent patients is essential so that various basic physiological and psychological needs can be conveyed and decisions, wishes, and desires about the plan of care and end-of-life decision making can be expressed. **Methods:** The study subjects were 60 post operative CABG patients, 30 in each group; control group and experimental group selected through purposive sampling technique is often referred to as theoretical or judgmental sampling. Non equivalent control group design was used to assess the effectiveness of modified communication board on communication ability of post-operative CABG patients. **Results:** The obtained 't' value is 12.15** is higher than the table value this indicates modified communication board is effective to enhance communication ability of post-operative CABG patients. Among experimental group about age and gender there was significant association found and in control group about gender association found, in clinical profile history of previous surgery strongly associated with communication ability of postoperative CABG patients. **Conclusion:** there was significant relation found between modified communication board and communication ability of post operative CABG patients. This type of studies helps the nurses working in intensive and critical care unit in communicating with the mechanically ventilated patients.

Keywords: Modified communication board, communication ability, CABG (Coronary Artery Bypass Graft)

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Introduction

Mechanical ventilation is indicated for numerous clinical and physiological reasons. The nursing management of the mechanically ventilated patient is challenging on many levels: from the acquisition of highly technical skills; expert knowledge on invasive monitoring; and implementation of interventions to care for the patients. Communicating effectively with ventilator-dependent patients is essential so that various basic physiological and psychological needs can be conveyed and decisions, wishes, and desires about the plan of care and end-of-life decision making can be expressed. Numerous methods can be used to communicate, including gestures, head nods, mouthing of words, writing, use of letter/picture boards and common words or phrases tailored to meet individualized patients' needs [1].

Mechanically ventilated patients having more communication difficulties. Inability to communicate can be a distressing problem for the patient who may be unable to speak because of the use of paralyzing drugs or an endotracheal tube. The nurse should explore alternative methods of communication including the use of devices such as picture board, note pads, magic slats, or computer keyboards, when speaking with the patient.

Patient communication board improve communication, organize information and create a comfortable, attractive setting for patients, nurses, doctors, other care givers and visitors. Communication board also helps health care personnel's, increases patient satisfaction, improve outcomes and assist with increase compliance to JCAHO standards.

The patient communication board improves communication, organization and patient satisfaction by providing one, easy to find, easy to use patient information.

Every patient who has communication impairment is provided a means to effectively communicate with their family and providers on their time, in their preferred language, demonstrating understanding, not withheld from resources that would allow this vision to be made possible.

The nurse can assist the patients and family with their feeling of anxiety by encouraging them to express concerns, ask questions, and state their needs.

"This may mean using a variety of methods throughout the patient's stay — after all, patient's abilities and performance fluctuate," Lance Patak said. "A communication board is definitely one of those methods." 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 [2].

In mechanically ventilated patients, sedatives and analgesics are commonly used to ensure comfort, but there is no documented knowledge about the impact of depth of sedation on patients' perception of discomfort [3]. Most critical care patients have both unpleasant and pleasant memories of their ICU stay because of Mechanical ventilation. Pleasant memories such as support and caring service are important to relieve the stress and may balance the impact of the distressing memories of the ICU stay [4].

Problem Statement: A quasi-experimental study to assess the effect of modified communication board on communication ability of post-operative CABG patients at selected hospital Bhopal.

Objectives

01. Assess the pre-intervention level of communication ability of the post-operative CABG patients among experimental and control group.
02. Assess the post-intervention level of communication ability of the post-operative CABG patients among experimental and control group.
03. Find out difference between pre-intervention level and post-intervention level of communication ability of the post-operative CABG patients among experimental and control group.
04. Associate pre-intervention level of communication ability of the post operative CABG patient with their selected demographic variables in experimental and control group.
05. Assess the level of satisfaction of post-operative CABG patients with modified communication board among experimental group.

Research Methodology

A quasi-experimental research approach was adopted for this study.

Communication ability was assessed by observational checklist, and patient's level of satisfaction was assessed by satisfaction questionnaire, non equivalent control group design was used to assess the effectiveness of modified communication board on communication ability of post-operative CABG patients.

Study design: In this study, non equivalent control group design was used to assess the effectiveness of modified communication board on communication ability of post-operative CABG patients.

Setting: This study is being conducted old Chiyayu Hospital.

Duration: April-May, 2012

Sample size: The study subjects were 60 post operative CABG patients, 30 in each group; control group and experimental group selected through purposive sampling technique is often referred to as theoretical or judgmental sampling.

Ethical Approval: A written permission was obtained to conduct the study from the administrative authorities of the institution.

Inclusion criteria

- Mechanically ventilated post operative CABG patients with Glasgow Coma Score 9 and above
- Age between 40 – 55 years or 55 years and above
- Willing to participate in the study

Exclusion criteria

- Head& Neck Surgery Patients
- Patients with stroke
- Extremely Weak Patients (Hospice)
- Too elderly patients (age above 65 years)

Development of the tool

- First chose the Glasgow coma range scale for patient's selection.
- Developed modified communication board consisting symbols or pictures of daily living.
- Observation checklist was prepared consisting thirty (30) questions divided into cognitive, communication, sensory and psychomotor assessment to assess the communication ability of the post-operative CABG patients. Scoring criteria, if it is yes scored one (1) and if it is wrong marked zero (0).

- Patient's satisfaction questionnaire (containing ten items) to know the level of patient's satisfaction, scoring criteria according to the rating. Scores divided into three categories, (21-30) poorly satisfied, (31-40) moderately satisfied and (41-50) highly satisfied.

Data analysis procedure: The data obtained from 60 respondents was analyzed by using descriptive and inferential statistics follows:

- A master data sheet was prepared and compiled demographic data, containing selected sample characteristics was analyzed using frequency and percentage distribution.
- Mean, median and standard deviation of pre intervention and post intervention scores of experimental group and control group.
- A descriptive and inferential statistical method was used after consultation the statistician.
- Data was collected and presented in the form of tables and bar diagrams.
- "t" test is done to know the difference between pre intervention and post intervention scores of experimental and control group.
- Chi square test was used to find out the association of pre intervention level with selected demographic variables in experimental and control group.
- The score of patient's satisfaction questionnaire was analyzed by using frequency and percentage distribution.

Results

Result in terms of Objectives of the study:

Assess the pre-intervention level of communication ability of the post-operative CABG patients among experimental and control group.

Among both experimental and control group most of the samples were categorized in poor category. In experimental group 17% samples were in average category and in control group 23% samples were in average category.

Table No-1: Representing frequency and percentage distribution of pre intervention scores of experimental and control group.

Pre intervention Score	Experimental Group		Control Group	
	Frequency	Percentage	Frequency	Percentage
	N	%	N	%
(1 - 10)	25	83 %	23	77%

(11 - 20)	05	17 %	07	23%
(21 - 30)	0	0 %	0	%

Assess the post-intervention level of communication ability of the post-operative CABG patients among experimental and control group.

At post intervention level, in experimental group, most of the samples 70 % had categorized in good category; 30 % samples were in average category and no one was in poor category. In control group, 37 % samples were in average category, 63 % samples were in poor category and no one was in good category.

Table No 2: Representing frequency and percentage distribution of post intervention scores of experimental and control group.

Post intervention Score	Experimental Group		Control Group	
	Frequency	Percentage	Frequency	Percentage
	N	%	N	%

(1 - 10)	0	0 %	19	63%
(11 - 20)	9	30 %	11	37%
(21 - 30)	21	70 %	0	%

Find out difference between pre-intervention level and post-intervention level of communication ability of the post-operative CABG patients among experimental and control group.

In experimental group Mean and ± SD of post-interventional level (18.2± 4.55) was higher than the Mean and ± SD of pre- interventional level (7.26± 1.94). The computed 't' value (12.15**) was found significant at 0.05 level of significance. In control group Mean and ± SD of post- observational level (9.03± 1.99) was little bit higher than the Mean and ± SD of pre- interventional level (8.2± 1.91) but the computed 't' value (1.66) was not found significant at 0.05 level of significance.

Table No-3: Difference between pre-intervention level and post-intervention level

Group	Scores	Mean	Median	Mean Difference	S.D.	df	't' value
Experimental Group	Pre intervention	7.26	7	10.94	1.94	58	12.15**
	Post intervention	18.2	21		4.55		
Control Group	Pre intervention	8.2	8	0.83	1.91	58	1.66
	Post intervention	9.03	8		1.99		

'T' (58) = 2.01, P < 0.05; 2.63, P < 0.01

Significant at .05 level and also significant at 0.01 level

Associate pre-intervention level of communication ability of the post operative CABG patient with their selected demographic variables in experimental and control group.

Among both the group (experimental and control) about age there was significant association found at

0.05 level of significance, about gender there was significant association found at 0.05 levels and 0.01 level of significance, regarding marital status, education and occupation no association were found, about history of previous surgery there was significant association found at 0.05 level of significance, about history of previous hospitalization, history of any other illness, history of any other medication, previous knowledge of communication board no associations were found.

Table No-4: Association of pre intervention scores with selected demographic variables of experimental group.

S. No.	Demographic profile	Pre- intervention score			Percentage	df	χ ²
		Poor	Average	Good			
1.	Age in years						
	40-45	0	0	0	0	6	13.99*
	46-50	3	0	0	10		
	51-55	4	5	0	30		
	Above 56	18	0	0	60		
2.	Gender						
	Male	25	2	0	90	2	16.65**
	Female	0	3	0	10		

3.	History of previous surgery						
	Yes	1	2	0	10	2	6.0*
	No	24	3	0	90		

*Significant at 0.05 level of significance;
 **Significant at 0.01 level of significance

Table No-5: Association of pre intervention scores with selected demographic variables of control group

S. No.	Demographic profile	Pre- intervention score			%	df	χ ²
		Poor	Average	Good			
1.	Gender						
	Male	19	2	0	70	2	7.42*
	Female	4	5	0	30		
2.	History of previous surgery						
	Yes	19	2	0	70	2	7.44*
	No	4	5	0	30		

*Significant at 0.05 level of significance;

Assess the level of satisfaction of post-operative CABG patients with modified communication board among experimental group.

In expressing their needs most of the samples 70% were highly satisfied with modified communication board and 30% of samples were moderately satisfied.

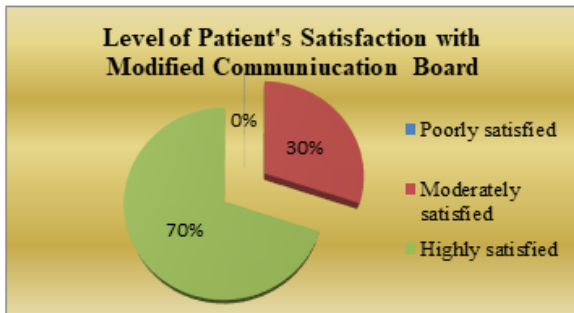


Fig-1: The pie graph representing the level of patient's satisfaction with modified communication board in percentage distribution.

Discussion

Among experimental group about age and gender there was significant association found, in control group about gender there was significant association found, in clinical profile history of previous surgery strongly associated with communication ability of postoperative CABG patients.

There was significant relation found between modified communication board and communication ability of post operative CABG patients.

The effectiveness of modified communication board on communication ability of post-operative CABG patients was assessed by comparing the both pre intervention and post intervention values by 't' test and it was found 12.15**, it is highly significant. This reveals that there is significant difference in the pre intervention and post intervention level of communication ability of the post-operative CABG patient's at 0.05 and 0.01 level of significance. In control group the value obtained was 1.66; it is not significant means there was in control group no development of communication ability of post-operative CABG patient's.

In expressing their needs most of the samples 70% were highly satisfied with modified communication board and 30% of samples were moderately satisfied. Findings of the study are consistent with the study conducted by Lance Patak et al Communication boards in critical care: patients' included twenty-nine critically ill patients who were extubated within the past 72 hours were included in this descriptive study.

Subjects participated in a 20- to 60-minute audiotaped interview consisting of questions about their perceived level of frustration when communicating with and without a communication board and their thoughts about the appropriate content and format of a board. Transcripts were analyzed by questions for meaning and overall themes. Results shows Sixty-two percent (n = 18) of 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 < .001) if a communication board had been offered (29.8%) than if not (75.8%). Most patients (69%; n = 20) perceived that a communication board would have been helpful, and they also identified specific characteristics and content for a communication board. A communication board may be an effective intervention for decreasing patients' frustration and facilitating communication [2].

Karin AM Samuelson concluded the findings of the 250 patients interviewed, 81% remembered the ICU stay, 71% described unpleasant memories and 59% pleasant. Ten categories emerged from the content analyses (five from unpleasant and five from pleasant memories), contrasting with each other: physical distress and relief of physical distress, emotional distress and emotional well-being, perceptual distress and perceptual well-being, environmental distress and environmental comfort, and stress-inducing care and caring service [4].

According to Lone Schou, Ingrid Egerod, the study had a descriptive qualitative design focusing on the lived experience of post-CABG (coronary artery bypass graft) patients ventilated ≥ 24 h ($n = 10$). Data were generated using semi-structured depth interviews conducted 2–5 months after hospital discharge. A hermeneutic phenomenological approach was used to analyze the data. The main findings relate to general phenomena such as discomfort and impaired communication, psychological phenomena such as loss of control and loneliness, and existential phenomena such as temporality and human interaction [5-8].

Effective communication with patients is critical to effective nursing practice. Surprisingly, there is little information on nurses' experiences in caring for patients who are unable to speak. This study provides descriptive information from interviews with 20 nurses who cared for patients with severe communication impairment.

The interview protocol explored positive and negative experiences of nursing patients with severe communication impairment. Frequency counts and descriptive analyses were conducted to identify the major themes emerging from the interviews.

The results suggest that nurse-patient communication is difficult when the patient has severe communication impairment, although some nurses discovered effective strategies to facilitate communication with such patients. Many of the difficulties could be viewed as a breakdown in understanding arising from the lack of a readily interpretable communication system that could be used by nurse and patient.

The results suggest a need for training nurses in the use of alternative modes of communication. Nurses also need access to a variety of simple augmentative communication devices for use with patients who are unable to speak [9-11].

Limitations

The study was limited to:

- The patients who are undergoing coronary artery bypass graft and admitted in Chirayu Hospital Bhopal.
- It was limited to four weeks of data collection.
- The study was limited to mechanically ventilated patients.

Conclusion

How to maintain communication with mechanically ventilated patients is a great need today. The nurse should explore alternative methods of communication including the use of devices such as picture board, note pads, magic slats, or computer keyboards, when speaking with the patient.

Patient communication board improve communication, organize information and create a comfortable, attractive setting for patients, nurses, doctors, other care givers and visitors. The obtained 't' value is 12.15** is higher than the table value this indicates modified communication board is effective to enhance communication ability of post-operative CABG patients. Nurses working in intensive care unit need to develop special skills in communicating with mechanically ventilated patients.

What the study adds to the existing knowledge?

This type of studies helps the nurses working in intensive and critical care unit in communicating with the mechanically ventilated patients. It is important for nurses to assess communication needs; identify appropriate alternative communication strategies to promote effective communication with non-vocal patients.

Recommendations

On the basis of the findings of the study, it is recommended that the following study can be undertaken to strengthen quality of nursing care;

- Similar study can be replicated on a large sample.
- Experimental study can be conducted to assess communication ability in patients with other cardiac surgeries and disease conditions.

- A study can be conducted to assess the communication problems of mechanically ventilated patients.
- Experimental study can be conducted to assess the level of frustration of mechanically ventilated patients.
- A study can be conducted to assess the effect of modified communication board on non-verbal patients

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