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EFFECT OF COMMUNICATION BOARD ON SELECTED PARAMETERS OF COMFORT IN MECHANICALLY VENTILATED PATIENTS IN SELECTED HOSPITALS OF PUNE

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ABSTRACT

Mechanical ventilation with positive pressure ventilation is a technique that has been employed in the intensive care unit (ICU) with increasing frequency since 1960. This patient population has clearly more different needs and resource consumption patterns than patients in acute ICUs. But, patients with mechanical ventilation are unable to speak while being dependent on others for their physical needs. Aim: to determine the effect of selected alternative communication technique on comfort level of patients with mechanical ventilation. Objectives: 1. To assess the base line data of selected parameters of comfort in experimental and control groups. 2. To assess the post intervention data on selected parameters of comfort. 3. To compare the selected parameters of comfort between experimental and control groups. Methodology: The researcher has used quantitative approach and quasi experimental design for the present study. 40 mechanically ventilated patients who fulfilled the inclusion criteria of being conscious, with mechanical ventilation (invasive or noninvasive), have good vision, can read and understand English and/or Marathi, and have good hearing ability admitted in selected hospital of Pune city were selected using purposive sampling technique. Tool: Demographic profile, Rating Scale on subjective assessment of comfort by patients, Visual Analogue Scale of comfort, and Physiological parameter – Heart rate. The reliability of the tools was calculated by Cronbach's alpha method. All tools were highly reliable. The data was analyzed using the descriptive and inferential statistics. Findings: There was significant difference between experimental and control groups with respect to post intervention level of comfort. Conclusion: The study results will be very useful for the patients with inability to communicate can reduce their stress by using this communication board to express themselves. It will also help the nurses to identify various forms of needs of mechanically ventilated patients, so they can take measures to fulfill them.

Key words: Communication Board, Mechanically Ventilated Patients, Comfort.

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INTRODUCTION

The importance of effective communication, as a fundamental element of nursing has also been acknowledged repeatedly and is regarded as an integral part for the provision of high quality, patient focused nursing care. Many nurse leaders believe that, assessment is the cornerstone of nursing; however effective communication is essential for such assessment. Communication plays a crucial role in the experience of intensive care unit (ICU) patients and their families, as the inadequate nurse patient communication results in increased levels of stress and anxiety.[1, 2]

Mechanical ventilation (MV) is a life-saving method usually applied in the Intensive Care Units (ICU) for patients in a critical condition. Its medical value has been well studied for decades; however its psychological impact has been investigated much less. During the past 50 years progressive development in the technology of life support and monitoring in the ICU has led the caregivers to underestimate the importance of human contact, and gradually ignore active communication with the patient, relying almost entirely on the numerical values produced by machines and monitors for treatment. Mechanically ventilated patients are usually sedated, and even when awake they are unable to speak, because of the tube in their throat.[3] Most people use speech as a primary way of

expressing themselves, but this option is taken away for mechanically ventilated patients as the tracheostomy or endotracheal tube interferes with air coming into contact with the larynx, thus impeding speech.[4]

Findings from earlier studies indicated that patients who were intubated and mechanically ventilated experienced difficulties in communication and were not given sufficient explanation by staff of their condition and the procedures undertaken as part of their treatment.[5]

In 1983, the American Association of Critical Care Nurses designated communication during mechanical ventilation as one of its top ten research priorities.[33] Despite the recognized importance of the subject, little research has been done and consequently, very less is known about the impact of being unable to speak with mechanically ventilated critically ill patients.[6]

Although patient communication during mechanical ventilation has long been recognized as a research priority in critical care, empirical studies have been limited.[7] Furthermore, published research that has focused on nurse patient communication processes in critical care remains sparse.[8]

Interventions that health care practitioners can use include interpreting a patient's nonverbal forms of communication such as mouthing, gesticulating, nodding, and writing. Such nonverbal methods not only require energy but are tiring and emotionally draining for these patients. The use of a board as an intervention to enhance communication has been proposed by health care practitioners.[9, 10-13]

American Thoracic Society document mentions that studies are needed to test interventions to improve nurse patient communication, including interpretation of non-vocal behaviors. In addition, studies are needed to determine ways of best assisting patients to use available communication devices.[14].

Conclusion:

During the clinical experience at Intensive Care Unit (ICU), the researcher also found that patients with mechanical ventilation face difficulties in expression of needs which leads to their discomfort. So, the researcher felt strong need of having some alternative communication method for this group of non-vocal patients. Communication board consisting of pictures, symbols and words, based on the needs of mechanically ventilated patients will assist them to express themselves. The board will facilitate to fulfill the physiological, psychological and spiritual needs of these patients.

Materials and Methods

Research approach:

In a view of the nature of the problem selected and objectives to be accomplishing comparative study with evaluative approach was considered as an appropriate one.

Research design:

Quasi experimental design, which belongs to experimental design, was selected for the present study.

O1: Assisting the subjects to fill the rating scale for the assessment of comfort level and also scoring of comfort level with the visual analogue scale on day one in both experimental and control groups, before introducing the communication board.

X: Use of the communication board for experimental group for one day.

O2: Assisting the subjects to fill the rating scale for the assessment of comfort level and also scoring of comfort level with the visual analogue scale on day two in both experimental and control groups, after introducing the communication board.

Setting of the study:

Research setting for the present study was 450 bedded Speciality hospital.

Variables:

Independent variable:

In the present study independent variable was communication board.

Dependent variable:

In the present study dependent variable was selected parameters of comfort i.e. comfort related to airway, basic needs and psychological aspects.

Sampling

Population:

The accessible population for the study comprising of mechanically ventilated patients in selected Speciality hospital of Pune.

Sample:

In the present study the sample consisted of forty mechanically ventilated patients. It includes both male and female patients. Communication board is used for twenty participants' i.e. experimental group.

Sample size:

For the present study sample size was forty i.e. twenty participants were included in the experimental group and twenty in the control group.

Criteria for sample selection:

Inclusion criteria:

1. Patients with mechanical ventilation (invasive as well as noninvasive)
2. Patients who were conscious
3. Patients with good vision, can read and understand English or Marathi
4. Patients with good hearing ability

Exclusion criteria:

1. Unconscious or semiconscious patients
2. Patients not willing to participate in the study

Sampling technique:

For the present study the purposive sampling technique was adopted.

Tools and techniques

Development of tool:

The following sources were used for the development of the tool:

1. Literature review
2. Consultation and discussion with nursing experts
3. Personal experience and discussion with colleagues

Tools used for this study were:

1. Demographic profile
2. Rating Scale on subjective assessment of comfort by patients
3. Visual Analogue Scale of comfort
4. Physiological parameter (vital parameter) – Heart rate.

Content validity:

To ensure the content validity of the tool; it was given to seven experts.

The experts included 3 faculty members from Medical Surgical Nursing, 1 Intensivist (physician), 1 speech language pathologist and 2 clinical psychologists.

No significant changes in the tool were suggested except in the need of Visual Analogue Scale for comfort instead of Visual Analogue Scale for discomfort.

Reliability:

The reliability of the tool was established by using the data collected from eight mechanically ventilated patients in selected 450 bedded multi-speciality hospital of Pune.

Reliability is established by Cronbach's alpha formula.

Pilot study:

Pilot study was conducted among eight mechanically ventilated patients (four participants were in the experimental group and four were in the control group) in 450 bedded multispecialty hospital of Pune.

Data gathering process:

The written permission was obtained from the Medical Director of the selected hospital. The purpose of the study and type of participation was explained to the mechanically ventilated patients as well as their immediate relatives. The written consent was obtained from the patients. Filling of rating scale and scoring of visual analogue scale was explained to the participants of both groups. Heart rate was recorded from the cardiac monitor. After that the rating scale to assess the baseline level of comfort was filled by the subjects in both the groups with the help of researcher. The subjects in the experimental group were introduced with the communication board including its content and use. On the second day post intervention comfort level was assessed by filling of same rating scale, visual analogue scale by the patient and the heart rate was noted by the researcher for subjects in experimental and control groups.

Data analysis:

The data obtained was analyzed by both descriptive and inferential statistics. Demographic data was planned to analyze in terms of frequencies and percentages. The comfort level among experimental and control groups before the introduction of communication board was analyzed in terms of mean and standard deviation. The significant difference between pre-test and post-test comfort score was determined by Mann Whitney test.

Results:

The data presented in table 3 reveals the description of demographic variables of the participants in the experimental and control groups. The highest number of participants 19(47.5%) were in the age group of sixty and above because the number of hospitalizations in this age group was much more than in the other group. The least number of participants 8(20%) were in the age group of twenty to forty, of which 6(15%) were in the experimental group and 2(5%) were in the control group. There were more numbers of male participants 26(65%) and less number of female participants 14(35%). The proportion of male and female participants was equal (13 male and 7 female) in both the study groups. According to level of education majority 18(45%) participants were having secondary education of which 10(25%) were in the experimental group and 8(20%) were in the control group. Only 1(2.5%) participant was illiterate. The number of participants with invasive and non invasive ventilation was equal in both the groups i.e. 20(50%) in the experimental group and 20(50%) in the control group. Maximum number of participants were in the group of one to three day of ventilation 29(72.5%) of which 14(35%) were in the experimental group and 15(37.5%) were in the control group. The least number of participants 2(5%) were having day of ventilation between five to seven of which 1(2.5%) was in the experimental group and 1(2.5%) was in the control group.

Table 4 shows pre intervention level of comfort by rating scale in study groups. The data reveals that, mean comfort level of the experimental group related to airway, basic needs and psychological aspects was15.75, 33 and 11.55 respectively. The mean comfort level of the control group related to airway, basic needs and psychological aspects was 16.25, 33.65 and was 12.45 respectively.

The obtained Z value (less than 1.96) confirms that that there was no significant difference between experimental and control groups with respect to pre intervention level of comfort related to airway, basic needs and psychological aspects.

Table 5 shows pre intervention level of comfort by visual analogue scale in both study groups. The data reveals that mean comfort level of the experimental group related to airway, basic needs and psychological aspects was 5.85, 6.75 and 3.85 respectively. The mean comfort level of the control group related to airway, basic needs and psychological aspects was 6.85, 6.95 and 4.6 respectively.

The obtained Z value (less than 1.96) reveals that there was no significant difference between experimental and control groups with respect to pre intervention level of comfort related to airway, basic needs and psychological needs.

Table 6 shows post intervention level of comfort by rating scale in both study groups. The data reveals that mean comfort level of the experimental group related to airway, basic needs and psychological aspects was18.35, 37.05 and 14.55 respectively. The mean comfort level of the control group related to airway, basic needs and psychological aspects was 16.25, 33.65 and 12.45 respectively.

Table 7 shows post intervention level of comfort by visual analogue scale in both study groups. The data reveals that mean comfort level of the experimental group related to airway, basic needs and psychological aspects was 7.3, 7.7 and 5.75 respectively. The mean comfort level of the control group related to airway, basic needs and psychological aspects was 6.85, 6.95 and 4.6 respectively.

The data in table 8 shows comparison of pre and post intervention level of comfort related to airway. Mean pre intervention level of comfort related to airway of the experimental group was 15.75 and 16.25 of the control group. Mean post intervention level of comfort related to airway of the experimental group was 18.35 and 16.25 of the control group.

Post intervention Z value 2.78 is statistically significant at $p < 0.05$. It indicates that there was a significant difference in post intervention level of comfort related to airway between the experimental and control groups.

The data in table 9 shows comparison of pre and post intervention level of comfort related to basic needs. Mean pre intervention level of comfort related to basic needs of the experimental group was 33 and 33.65 of the control group. Mean post intervention level of comfort related to basic needs of the experimental group was 37.05 and 33.65 of the control group.

Post intervention Z value 2.02 is statistically significant at $p < 0.05$. It indicates that there was a significant difference in post intervention level of comfort related to basic needs between experimental and control groups.

The data in table 10 shows comparison of pre and post intervention level of comfort related to psychological aspects. Mean pre intervention level of comfort related to psychological aspects of the experimental group and control group was 11.55 and 12.45 respectively. Mean post intervention level of comfort related to psychological aspects of the experimental group and control group was 14.55 and 12.45.

Post intervention Z value 1.67 is statistically not significant, $p > 0.05$. The above data reveals that there was no significant difference in post intervention level of comfort related to psychological aspects between experimental and control groups.

The data in table 11 shows comparison of pre and post intervention level of comfort related to airway by visual analogue scale. Mean pre intervention level of comfort related to airway of the experimental group and control group was 5.85 and 6.85 respectively. Mean post intervention level of comfort related to airway of the experimental group and control group was 7.3 and 6.85 respectively.

The post intervention Z value 1.98 is statistically significant at $p < 0.05$. It indicates that there was a significant difference in post intervention level of comfort related to airway between experimental and control groups.

The data in table 12 shows comparison of pre and post intervention level of comfort related to basic needs by visual analogue scale. Mean pre intervention level of comfort related to basic needs of the experimental group and control group was 6.75 and 6.95. Mean post intervention level of comfort related to basic needs of the experimental group and control group was 7.7 and 6.95.

Post intervention Z value 2.74 is statistically significant at $p < 0.05$. It indicates that there was a significant difference in post intervention level of comfort related to basic needs between experimental and control groups.

The data in table 13 shows comparison of pre and post intervention level of comfort related to psychological aspects. Mean pre intervention level of comfort related to psychological aspects of the experimental group was 3.85 and 4.6 of the control group. Mean post intervention level of comfort related to psychological aspects of the experimental group was 5.75 and 4.6 of the control group.

Post intervention Z value 1.91 is statistically not significant, $p > 0.05$. It indicates that there was no significant difference in post intervention level of comfort related to psychological aspects between experimental and control groups.

The data in table 14 shows comparison of pre and post intervention heart rate between the experimental and control groups. Mean pre intervention heart rate of the experimental group and control group was 74.9 and 76.7 respectively. Mean post intervention heart rate of the

experimental group and control group was 75.6 and 77.8 respectively.

The post intervention Z value 0.54 is statistically not significant, $p > 0.05$ level. It indicates that there was no significant difference in pre and post intervention heart rate between experimental and control groups.

Table: 1 Schematic representation of research design

Group	Pretest on day-1	Treatment on day-1	Posttest on 2nd day
Experimental	O1	x	O2
Control	O1	-	O2

Table 2: The reliability obtained for tools is mentioned in the following table:

Sr No	Tool	Correlation	P (level of significance)	Reliability
1	Rating scale	0.80	0.0001**	0.89
2	VAS	1	0.0001**	1
3	Heart Rate	0.76	0.001**	0.87

Note: ** p < 0.001 = highly significant

Table 3: Description of demographic variables of groups using frequency and percentage N = 40

Demographic variable	Experimental f (%)	Control f (%)	Total f (%)
Age (Yrs)			
20 – 40	6 (15)	2 (5)	11 (27.5)
40 – 60	4 (10)	9 (22.5)	13 (32.5)
60 +	10 (25)	9 (22.5)	19 (47.5)
Sex			
Male	13 (32.5)	13 (32.5)	26 (65)
Female	7 (17.5)	7 (17.5)	14 (35)
Educational status			
Illiterate	1 (2.5)	0 (0)	1 (2.5)
Primary	7 (17.5)	6 (15)	13 (32.5)
Secondary	10 (25)	8 (20)	18 (45)
Higher secondary	1 (2.5)	5 (12.5)	6 (15)
Graduate	1 (2.5)	1 (2.5)	2 (5)
Type of ventilation			
Invasive	10(25)	10(25)	20(50)
Non invasive	10(25)	10(25)	20(50)
Day of ventilation			
1 - 3	14(35)	15(37.5)	29(72.5)
3 – 5	4 (10)	1 (2.5)	5 (12.5)
5 – 7	1 (2.5)	1 (2.5)	2 (5)
> 7	1 (2.5)	3 (7.5)	4 (10)

Table 4: Pre intervention level of comfort by rating scale between study groups N = 40

Parameters of comfort	Experimental	Control	Z Value	p Value
	Mean ± SD ($n_1 = 20$)	Mean ± SD ($n_2 = 20$)		
Airway	15.75 ± 2.92	16.25 ± 2.47	0.64	0.56^{NS}
Basic needs	33 ± 4.01	33.65 ± 3.33	0.70	0.58^{NS}
Psychological aspects	11.55 ± 2.72	12.45 ± 3.03	1.07	0.33^{NS}

Note: NS p > 0.05 - Non significant

Table 5: Pre intervention level of comfort by visual analogue scale between study groups N = 40

Parameters of comfort	Experimental	Control	Z Value	p Value
	Mean ± SD ($n_1 = 20$)	Mean ± SD ($n_2 = 20$)		
Airway	5.85 ± 1.81	6.85 ± 1.39	1.90	0.06^{NS}
Basic needs	6.75 ± 1.29	6.95 ± 0.99	0.55	0.58^{NS}

Psychological aspects	3.85 ± 1.66	4.6 ± 1.90	1.23	0.19 NS

Note: NS p > 0.05 - Non significant

Table 6: Post intervention level of comfort by rating scale between study groups N=40

Parameters of comfort	Experimental	Control	Z Value	p Value
	Mean ± SD (n_1 = 20)	Mean ± SD (n_2 = 20)		
Airway	18.35 ± 2.30	16.25 ± 2.47	2.78	0.008*
Basic needs	37.05 ± 5.77	33.65 ± 3.33	2.02	0.03*
Psychological aspects	14.55 ± 3.76	12.45 ± 3.03	1.67	0.06 NS

Note: NS p > 0.05 - Non significant
*** p < 0.05 – Significant**

Table 7: Post intervention level of comfort by visual analogue scale between study groups N=40

Parameters of comfort	Experimental	Control	Z Value	p Value
	Mean ± SD (n_1 = 20)	Mean ± SD (n_2 = 20)		
Airway	7.3 ± 1.42	6.85 ± 1.39	1.98	0.05*
Basic needs	7.7 ± 1.26	6.95 ± 0.99	2.74	0.04*
Psychological aspects	5.75 ± 2.10	4.6 ± 1.90	1.91	0.08 NS

Note: * p < 0.05 = Significant
NS p > 0.05 = Not significant

Table 8: Comparison of pre and post intervention level of comfort related to airway by rating scale between study groups. N = 40

Level of comfort related to airway	Experimental	Control	Z Value	p Value
	Mean ± SD (n_1=20)	Mean ± SD (n_2=20)		
Pre intervention	15.75 ± 2.92	16.25 ± 2.47	0.64	0.56 NS
Post intervention	18.35 ± 2.30	16.25 ± 2.47	2.78	0.008*

Note: * p < 0.05 = Significant
NS p > 0.05 = Not significant

Table 9: Comparison of pre and post intervention level of comfort related to basic needs by rating scale between study groups N = 40

Level of comfort related to basic needs	Experimental	Control	Z Value	P Value
	Mean ± SD (n_1=20)	Mean ± SD (n_2=20)		
Pre intervention	33 ± 4.01	33.65 ± 3.33	0.70	0.58 NS
Post intervention	37.05 ± 5.77	33.65 ± 3.33	2.02	0.03*

Note: * p < 0.05 = Significant
NS p > 0.05 = Not significant

Table 10: Comparison of pre and post intervention level of comfort related to psychological aspects by rating scale in study groups N = 40

Level of comfort related to psychological aspects	Experimental	Control	Z Value	p Value
	Mean ± SD (n_1=20)	Mean ± SD (n_2=20)		
Pre intervention	11.55 ± 2.72	12.45 ± 3.03	1.07	0.33 NS
Post intervention	14.55 ± 3.76	12.45 ± 3.03	1.67	0.06 NS

Note: NS p > 0.05 = Not significant

Table 11: Comparison of pre and post intervention level of comfort related to airway by visual analogue scale in study groups N = 40

Level of comfort related to airway	Experimental	Control	Z Value	p Value
	Mean ± SD (n_1 = 20)	Mean ± SD (n_2 = 20)		
Pre intervention	5.85 ± 1.81	6.85 ± 1.39	1.90	0.06 NS
Post intervention	7.3 ± 1.42	6.85 ± 1.39	1.98	0.05*

Note: * p < 0.05= Significant

NS p > 0.05 = Not significant

Table 12: Comparison of pre and post intervention level of comfort related to basic needs by visual analogue scale between study groups. **N = 40**

Level of comfort related to basic needs	Experimental	Control	Z Value	p Value
	Mean ± SD (n_1 = 20)	Mean ± SD (n_2 = 20)		
Pre intervention	6.75 ± 1.29	6.95 ± 0.99	0.55	0.58 NS
Post intervention	7.7 ± 1.26	6.95 ± 0.99	2.74	0.04*

Note: * p < 0.05= Significant
NS p > 0.05 = Not significant

Table 13: Comparison of pre and post intervention level of comfort related to psychological aspects by visual analogue scale between study groups **N = 40**

Level of comfort related to psychological aspects	Experimental	Control	Z Value	p Value
	Mean ± SD (n_1 = 20)	Mean ± SD (n_2 = 20)		
Pre intervention	3.85 ± 1.66	4.6 ± 1.90	1.23	0.19 NS
Post intervention	5.75 ± 2.10	4.6 ± 1.90	1.91	0.08 NS

Note: NS p > 0.05 = Not significant

Table 14: Comparison of pre and post intervention heart rate in study groups N = 40

Heart rate	Experimental	Control	Z Value	P Value
	Mean ± SD (n_1 = 20)	Mean ± SD (n_2 = 20)		
Pre intervention	74.9 ± 13.19	76.7 ± 11.68	0.46	0.65 NS
Post intervention	75.6 ± 13.73	77.8 ± 12.07	0.54	0.59 NS

Note: NS p > 0.05 = Not significant

Figure 1: Pre intervention level of comfort by rating scale in study groups

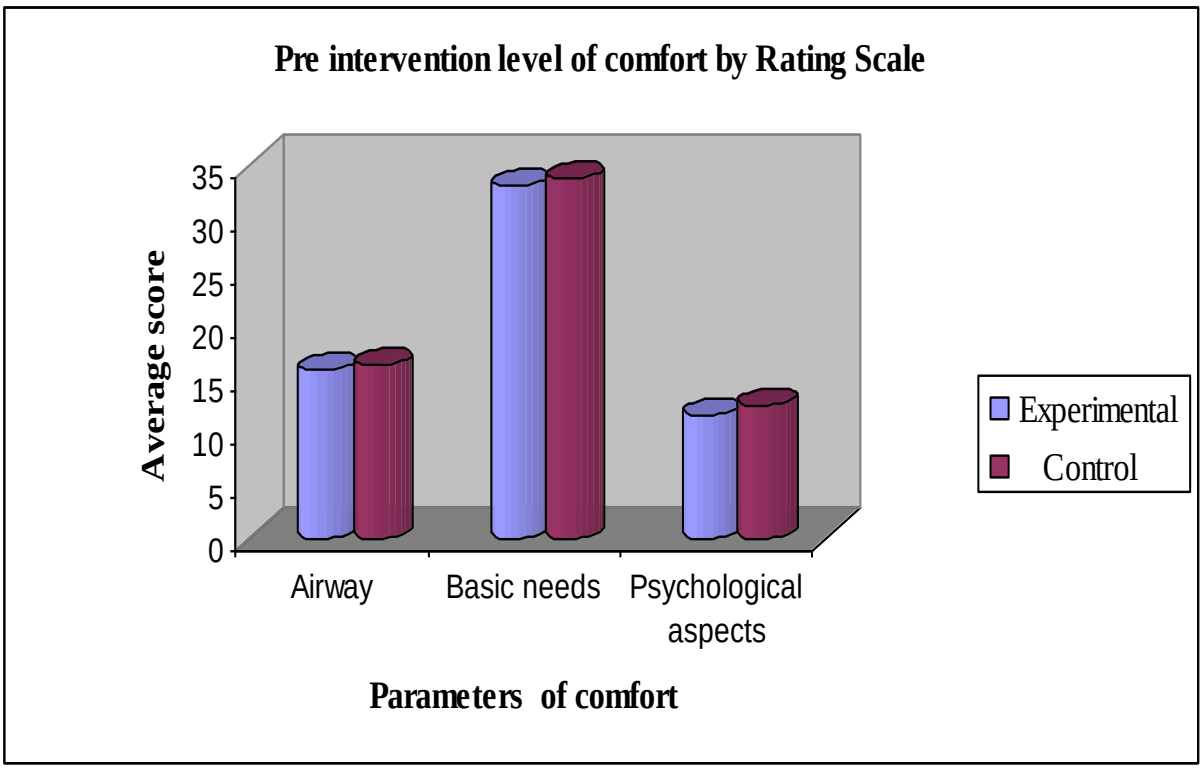


Figure 2: Pre intervention level of comfort by visual analogue scale in study groups

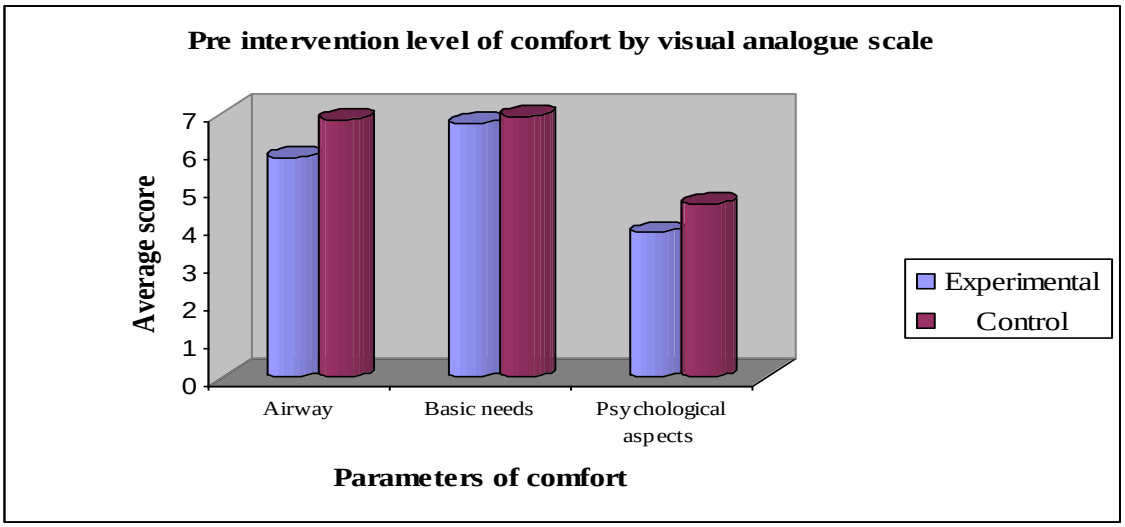


Figure 5: Comparison of pre and post intervention level of comfort related to airway by rating scale between study groups

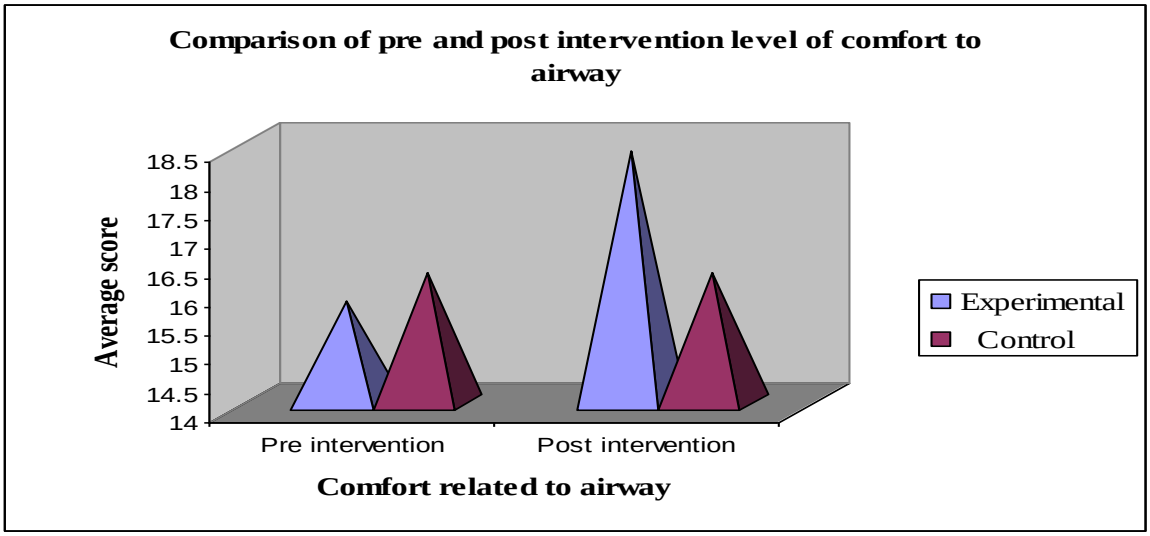
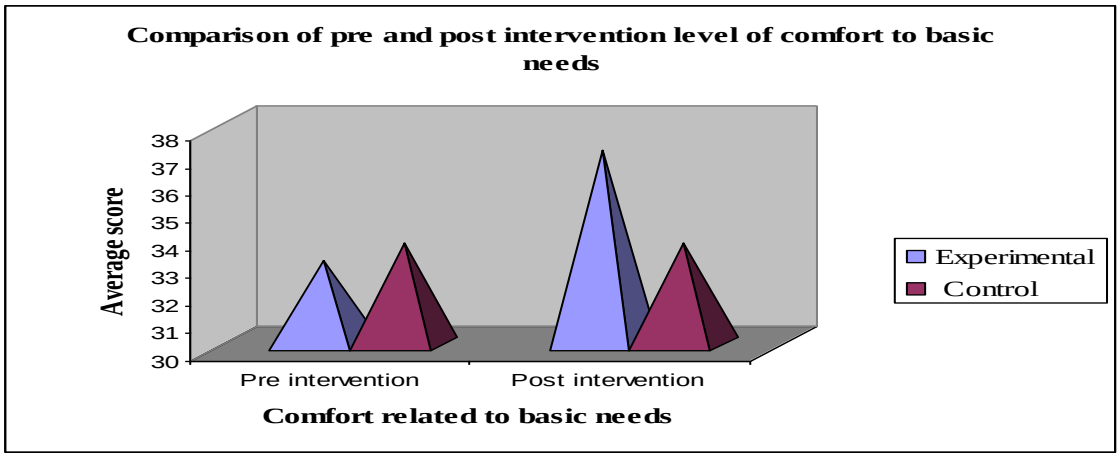


Figure 6: Comparison of pre and post intervention level of comfort to basic needs by rating scale between study groups.



Discussion:

The results revealed that use of communication board for mechanically ventilated patients increased the comfort level of patients. The findings of the study are consistent with the results of the study, "communication boards in critical care: patient's views". In this exploratory descriptive study, 29 patients were interviewed within 72 hours of extubation. Most participants (86%; n = 25) had received ventilator support after elective surgery and four (14%) required emergent intubation. Twenty three (79%) participants received anxiolytic medications while receiving mechanical ventilation. Eighteen (62%) patients reported high level of frustration associated with their inability to communicate effectively while receiving mechanical ventilation. When patients were asked to rate how frustrated they would have been if a communication board had been used, their frustration levels were significantly lower (29.8%) than the levels of frustration they reported for trying to communicate without communication board (75.8%). Sixty nine percent of participants (n = 20) reported that a communication board would have been extremely helpful. Patients also suggested that early exposure to the communication board during a preoperative teaching session.[15]

The findings of the present study are also consistent with the results of the study conducted by Stovsky B, Rudy E, Dragonette P. In this study a quasi-experimental design was used to compare two methods of communication in 40 patients receiving ventilator support after cardiac surgery. The experimental group (n = 20) was introduced to a communication board before surgery and they used the board during the postoperative period while receiving mechanical ventilation. The communication board used icons and pictures to represent basic needs (pain, fear, heat/cold, thirst, and bedpan). In contrast, the control group (n = 20) relied on standard care and on the experience of nurses. Patients in the experimental group were significantly more satisfied with communication using the board than were patients in the control group. The level of significance was p = .05.[16]

Conclusion:

- The Mann-Whitney U test was used to find out the effect of communication board on comfort level of selected parameters in mechanically ventilated patients at 5% level of significance.
- Comparison of post intervention comfort level of selected parameters between the experimental and the control groups revealed that there was significant difference in comfort level related to airway and basic needs although the difference with respect to psychological aspect was statistically not significant. It was also found that there was no significant difference in post intervention heart rate between the experimental and the control groups.
- As the results revealed that there was a significant increase in comfort level of selected parameters of an experimental group at 5% level of significance, null hypothesis is rejected and alternative hypothesis is accepted.
- From this study, it is proved that the communication board increased the comfort level with respect to airway and basic needs of mechanically ventilated patients.

REFERENCES

1. Jafar A, Muayyad A. Communication with critically ill patients. Journal of Advanced Nursing 2005;50(4):356-62.
2. Barker C, Melby V. An investigation into the attitudes and practices of intensive care nurses towards verbal communication with unconscious patients. Journal of Advanced Nursing 1999; 29:1412-20.
3. Varga K, Dioszeghy C, Frituz G. Suggestive communication with the ventilated patient. European Journal of Mental Health [serial online] 2007; (2):137–47. Available from:URL:http://www.akademiai.com/content
4. Drayton HS, Mandzak MK. Resiratory Rehabilitation: Communication aids for the tracheotomized patient. Rehabilitation Nursing 1987; 12:193-95.
5. Kornfeld D. Psychiatric view of the intensive care unit. British Medical Journal 1969; 1:108.
6. Nochomovitz M, Montengro H, Parran S, Daly B. Placement alternatives for ventilator dependent patients outside the intensive care unit. Respiratory care 1991; 36(3):199 -204.
7. Ashworth P. Staff patient communication in coronary care units. Journal of Advanced Nursing 1984;9:35-42.
8. Bergbom EI, Haljamae H. A retrospective study of patient's recall of respirator treatment (2): Nursing care factors and feelings of security / insecurity. Intensive Care Nursing 1988; 4:95-101.
9. Lewandowski L, Kositsky A. Research priorities for critical care nursing. A study by the American Association of Critical Care Nurses. Heart and Lung 1983; 12:35-44.
10. Ashworth P. Staff patient communication in coronary care units. Journal of Advanced Nursing 1984;9:35-42.
11. Adomat R, Killingworth A. Care of the critically ill patient: The impact of stress on the use of touch in intensive therapy units. (1994).
12. Belitz J. Minimizing the psychological complications of patients who require mechanical ventilation. Critical Care Nurse 1983; 3:42– 46.

13. Martensson I, Fridlund B. Factors influencing the patient during weaning from mechanical ventilation: A national survey. Intensive and Critical Care Nursing 2002; 18:219– 29.
14. Williams M. An algorithm for selecting a communication technique with intubated patients. Dimensions of Critical Care Nursing 1992; 11:222–29.
15. Patak L, Gawlinski A, Fung I, Doering L, Berg J, Henneman EA. Communication Boards in Critical Care: Patients Views. Applied Nursing Research. 2006; (19):182-90.
16. Stovsky B, Rudy E, Dragonette P. Comparison of two types of communication methods used after cardiac surgery with patients with endotracheal tubes. Heart and Lung, 1988; 17:281– 89.