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Effectiveness of High-Tech Communication Board on Patients Response and Level of Satisfaction among Mechanical Ventilated Patients

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ABSTRACT

Communication is a crucial component and fundamental segment of nursing in all zones that renders it exercise to practice every one of its intercessions, including prevention, treatment, recovery, instruction and wellbeing advancement. Communication is a basic part of successful consideration in clinic setting, particularly in ICU where patients can encounter adjusted Communication capacities because of their basic sickness. Patient's results are impacted by the patient's capacities to impart successfully and take an interest in their consideration. Hence the present study aimed to assess the effectiveness of high-tech communication board on patient response and level of satisfaction among mechanically ventilated patients in an intensive care unit. True experimental - Post-test only design was employed with 60 patients in which 30 were allotted to the experimental and 30 to the control group. Demographic variables data were collected by using a structured questionnaire followed by assessing the response of the patients using patient response scale after using High-tech communication board. Patient's satisfaction was assessed after usage of High-tech communication board using a satisfaction scale. The findings of the study revealed that most of the patients had a good response in the experimental group than the patients in the control group in which the comparison between the two groups showed a significant difference between the mean scores. Based on findings, comparative studies can be conducted with other High-Tech Communication Board in different settings with large samples.

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INTRODUCTION

Communication is a crucial component and fundamental segment of nursing in all zones that renders it exercise to practice every one of its intercessions, including prevention, treatment, recovery, instruction and wellbeing advancement. (Happ *et al.*, 2011) Communication is a basic part of successful consideration in clinic setting, particularly in ICU where patients can encounter adjusted Communication capacities because of their basic sickness. (Carroll, 2004) Patient's results are impacted by the patient's capacities to impart successfully and take an interest in their consideration. (Happ *et al.*, 2004) The significance of communication and its effect on result is perceived by a few substances, including the Joint

Commission, American Association of Critical consideration Nurses (AACN), Society of Critical Care Medicine (SCCM) and NIH (National Institutes of Health). (Finke *et al.*, 2008) The quantity of patients requiring delayed mechanical ventilation (PMV) is probably going to increase. (Wojnicki-Johansson, 2001) Out of 8290 ICU affirmation scenes, 7848 were remembered for the investigation. The occurrence of PMV was 4.4 per 100 ICU admission, and 6.3 per 100 ventilated ICU admissions. (Grossbach *et al.*, 2011)

Communication in the serious consideration setting is basic for both the patient and the clinical staff to give the proficient mind and in this manner, lighten conceivable patient unfavourable effects. (Khalaila *et al.*, 2011) Persons with complex correspondence needs are especially helpless in escalated care settings and subsequently require extra Communication support. (Liu *et al.*, 2009)

A clinically noteworthy extent of non-enduring patients treated with mechanical ventilation in the emergency unit to attendants, different clinicians, and relatives fundamentally through signal, head gestures and words. (Rotondi *et al.*, 2002) The most generally utilized specialized strategies with basically sick patients, similar to lip perusing, motions, and head gestures, are tedious, insufficient to meet all correspondence needs and disappointing for the two patients and nurse. (Gropp *et al.*, 2019) Therefore the Medical and Nursing staff ought to likewise know about the procedures and innovation accessible for intubated patients to participate in correspondence and to improve personal satisfaction, including the utilization of spelling sheets, icon outlines, and electronic aids. (Pandian *et al.*, 2014)

In a medical care setting, communication separate among patient and parental figure can have disparate outcomes like expanded patient torment, misdiagnosis, drug therapy blunders, and pointless augmentation long of clinic remain, even death. (Tate *et al.*, 2012) In the 6th year 1997-2002 investigation of the main driver of — sentinel events‖ in a medical clinic, The Joint Commission on Accreditation in Health Care Organization (JCAHO) in certainty set — communication‖ at the extreme head of the rundown of underlying drivers. Precisely ventilated patients can't communicate their sentiments and requirements through verbal correspondence in light of the fact that the endotracheal tubes going through their vocal lines make discourse incomprehensible, adding to their dissatisfaction and uneasiness. Accordingly, the parental figure is compelled to decipher the patients' nonverbal correspondence, for example, mouthing, gesturing, gesturing and composing — which can be hard for the basically sick patient. (Hoorn *et al.*, 2016)

Almost 40% of seriously sick patients who die in hospitals spend their last days and hours in clinical escalated care getting mechanical ventilation. (Wong *et al.*, 2020) Many patients bite the dust in torment without the capacity to completely communicate their necessities, wishes about finish of-life care, or last messages to friends and family and the intubated patients, the individuals who are the most seriously sick have the best outrage about the failure to talk. Over the most recent 20 years, the research considers identified with mechanical ventilation have zeroed in on the encounters of the patient and his/her correspondence with the medical care specialist and above all else, the encounters of patients who required mechanical ventilation were investigated in 3 subjective examinations. Patients who can't impart adequately has trouble in communicating their sentiments and fundamental needs like washing, brushing, toileting, thirst hunger, torment, and so forth. While examiner posted in basic consideration unit, the specialist felt very trouble in understanding the requirements of patients on ventilator. (Dithole *et al.*, 2017)

The patients are normally communicating their emotions and necessities through certain signals. Yet, more often than not, those motions are not perceived by the parental figure. Along these lines, the agent built up an understanding to utilize some imaginative strategies to improve the communication of intubated patients. The Communication Board is discovered to be a more compelling nonverbal specialized technique in intubated patients. Powerful communication helps can bring back the fulfilment of patients over correspondence design. Henceforth the examiner chose to see if the communication board can possibly improve communication and satisfaction among mechanically ventilated patients.

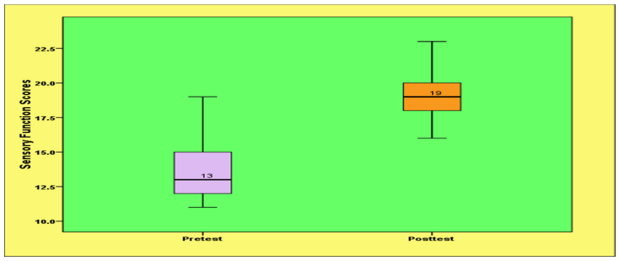

Figure 1: Comparison of pretest and post-test level of sensory function among patients with stroke

Table 1: Frequency and percentage distribution of post-test level of patient response among mechanically ventilated patients in the experimental and control group.

Patient Response	Not At All		Mild		Moderate		Very Much	
	No.	%	No.	%	No.	%	No.	%
Experimental	0	0	0	0	10	33.3	20	66.7
Control	0	0	3	10.0	27	90.0	0	0

Table 2: Frequency and percentage distribution of post-test level of satisfaction among mechanically ventilated patients in the experimental and control group.

Satisfaction	Strongly Disagree		Disagree		Agree		Strongly Agree	
	No.	%	No.	%	No.	%	No.	%
Experimental	0	0	0	0	0	0	30	100.0
Control	0	0	0	0	4	13.3	26	86.67

Table 3: Comparison of the post-test level of patient response among mechanically ventilated patients between the experimental and control group.

Patient Response	Mean	S.D	Mean Difference Score	Student Independent 't' Test
Experimental Group	8.03	1.07	2.33	t = 9.258
Control Group	5.70	0.88		S***
				P = 0.0001

MATERIALS AND METHODS

The research approach adopted in the study was a quantitative approach by using True experimental post-test only design. The study was conducted at Saveetha Medical College and Hospital, Chennai, after obtaining formal permission from the Institutional Review Board and Institutional Ethical Committee of SIMATS. The study was conducted with 50 mechanically ventilated patients. Sample who satisfied the inclusion criteria were selected by simple random sampling technique – Random table method. Samples who were hemodynamically unstable and visually impaired were excluded from the study. The investigator introduced himself and the data related to demographic variables were collected by using a multiple-choice questionnaire and the patient's response was recorded using a patient response scale after using the High-Tech Communication Board (HTCM). The usage of the app was explained clearly and demonstrated to all the participants the high-tech communication board was used whenever his/her needs a post-test was done using patient response scale and level of satisfaction scale. Brown split-half method was used for testing the reliability for patient response scale and level of satisfaction scale. Patient response scale constituted of patient response questionnaire and level of satisfaction questionnaire. The reliability for patient response and level of satisfaction are 0.77 and 0.85, respectively. The reliability for a level of satisfaction scale is 0.83. Confidentiality and anonymity were maintained throughout the procedure. Collected data were analysed by using descriptive and inferential statistics.

RESULTS AND DISCUSSION

The Sample characteristics are in the experimental group, most of them 12(40%) were in the age group of 36 to 45, 19(63.3%) were male, 11(36.7%) had respiratory distress syndrome and shock respectively, 15(50%) had a hearing and visual impairments respectively, 13(43.4%) were in mechanical ventilation for 18 hours, 25(83.3%) had no previous history of mechanical ventilation and 16(53.3%) were staying in ICU for 1 to 3 days. The table 1 also shows that in the control group, most of them 9(30%) were in the age group of 18 to 35 years, 36 to 45 years and 46 to 60 years respectively, 16(53.3%) were female, 12(40%) had respiratory distress syndrome, 17(56.7%) had visual impairments, 11(36.7%) were in mechanical ventilation for 18 hours, 20(66.7%) had no previous history of mechanical ventilation and 16(53.3%) were staying in ICU for 3 to 5 days. Homogeneity was maintained

for all the demographic variables in the two groups.

The Table 1 shows that in the experimental group 20(66.7%) had very much response and 10(33.3%) had a moderate response and whereas in the control group, 27(90%) had a moderate response and 3(10%) had mild response among mechanically ventilated patients.

The analysis of patient's satisfaction in Table 2 shows that in the experimental group all 30(100%) had strongly agreed for satisfaction and in the control group, 26(86.67%) had strongly agreed for satisfaction and 4(13.3%) had agreed for satisfaction (Table 2).

The Table 3 shows that in the experimental group, the post-test mean score of patient response was 8.03±1.07 and the post-test mean score in the control group was 5.70±0.88. The mean difference score was 2.33. Student 't' test was computed to and the calculated paired 't' test value of t=26.035 was found to be statistically highly significant at p<0.001 level. The above finding clearly infers that the sensory stimulation on sensory function administered to patients with stroke was found to be effective in improving the level of sensory function in the post-test. (Figure 1)

The findings revealed that only the demographic variable type of stroke had shown a statistically significant association with the post-test level of sensory function among patients with stroke at p<0.05 level. The statistical analysis further shows that only the demographic variable age had shown statistically significant association with the post-test level of satisfaction among mechanically ventilated patients in the experimental group at p<0.05 level.

Present study findings were supported by studies conducted by Mc Cabe (2014) directed a subjective perspective study by utilizing a phenomenological subjective methodology. Eight patients were met and information was gathered by utilizing unstructured meetings. The examiner reasoned that the patients were discovered somewhat hard to impart through non-verbal communication while on a mechanical ventilator. (Mccabe, 2004; Patak *et al.*, 2006) uncovered that 69% of the patients saw that a communication board would have been useful, and they additionally distinguished explicit qualities and substance for a communication board. Along these lines, a correspondence board might be a viable intercession for diminishing patient's disappointment and encouraging communication. Scarcely any more examinations done an examination uncovered that the patient was typically connected with sentiments of stress, hesitance to drive forward and brought about limiting or maintaining a strategic distance from the association regarding communication disappointment or dissatisfaction. Basic consideration attendants decipher the components, for example, knowing the patient, the patient's capacity to cooperate and utilize assistive specialized gadgets and family presence to improve communication with precisely ventilated patients.

CONCLUSIONS

The study findings concluded the there was a significant improvement in patient response and level of satisfaction those who received high tech communication board intercession than the individuals who don't have the communication board. This data offers understanding into the viability of cutting edge communication board in encouraging communication. Understanding likewise portrayed a few focal points of communication board with preprinted text it expands the productivity and speed of correspondence and it encourages addressing of requirements.

Conflict of interest

The authors declare that they have no conflict of interest for this study.

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REFERENCES

Carroll, S. M. 2004. Nonvocal Ventilated Patients Perceptions of Being Understood. *Western Journal of Nursing Research*, 26(1):85–103.

Dithole, K. S., Thupayagale-Tshweneagae, G., Akpor, O. A., Moleki, M. M. 2017. Communication skills intervention: promoting effective communication between nurses and mechanically ventilated patients. *BMC Nursing*, 16(1).

Finke, E. H., Light, J., Kitko, L. 2008. A systematic review of the effectiveness of nurse communication with patients with complex communication needs with a focus on the use of augmentative and alternative communication. *Journal of Clinical Nursing*, 17(16):2102–2115.

Gropp, M., Johnson, E., Bornman, J., Koul, R. 2019. Nurses' perspectives about communication with patients in an intensive care setting using a communication board: A pilot study. *Health SA Gesondheid*, 24.

Grossbach, I., Stranberg, S., Chlan, L. 2011. Promoting Effective Communication for Patients Receiving Mechanical Ventilation. *Critical Care Nurse*, 31(3):46–60.

Happ, M. B., Garrett, K., Thomas, D. D., Tate, J., George, E., Houze, M., Radtke, J., Sereika, S. 2011. Nurse-Patient Communication Interactions in the Intensive Care Unit. *American Journal of Critical Care*, 20(2):e28–e40.

Happ, M. B., Tuite, P., Dobbin, K., DiVirgilio-Thomas, D., Kitutu, J. 2004. Communication Ability, Method, and Content Among Nonspeaking Nonsurviving Patients Treated With Mechanical Ventilation in the Intensive Care Unit. *American Journal of Critical Care*, 13(3):210–218.

Hoorn, S. T., Elbers, P. W., Girbes, A. R., Tuinman, P. R. 2016. Communicating with conscious and mechanically ventilated critically ill patients: a systematic review. *Critical Care*, 20(1):333–333.

Khalaila, R., Zbidat, W., Anwar, K., Bayya, A., Linton, D. M., Sviri, S. 2011. Communication Difficulties and Psychoemotional Distress in Patients Receiving Mechanical Ventilation. *American Journal of Critical Care*, 20(6):470–479.

Liu, J. J., Chou, F. H., Yeh, S. H. 2009. Basic needs and their predictors for intubated patients in surgical intensive care units. *Heart & Lung*, 38(3):208–216.

Mccabe, C. 2004. Nurse-patient communication: an exploration of patients' experiences. *Journal of Clinical Nursing*, 13(1):41–49.

Pandian, V., Smith, C. P., Cole, T. K., Bhatti, N. I., Mirski, M. A., Yarmus, L. B., Feller-Kopman, D. J. 2014. Optimizing communication in mechanically ventilated patients. *Journal of medical speech-language pathology*, 21(4).

Patak, L., Gawlinski, A., Fung, N. I., Doering, L., Berg, J., Henneman, E. A. 2006. Communication boards in critical care: patients' views. *Applied Nursing Research*, 19(4):182–190.

Rotondi, A. J., Chelluri, L., Sirio, C., Mendelsohn, A., Schulz, R., Belle, S., Im, K., Donahoe, M., Pinsky, M. R. 2002. Patients' recollections of stressful experiences while receiving prolonged mechanical ventilation in an intensive care unit*. *Critical Care Medicine*, 30(4):746–752.

Tate, J. A., Seaman, J. B., Happ, M. B. 2012. Overcoming Barriers to Pain Assessment: Communicating Pain Information with Intubated Older Adults. In *Geriatric Nursing*, volume 33, pages 310–313. Elsevier BV.

Wojnicki-Johansson, G. 2001. Communication between nurse and patient during ventilator treatment: patient reports and RN evaluations.

Wong, A.-K. I., Cheung, P. C., Happ, M. B., Gay, P. C., Collop, N. A. 2020. Consequences and Solutions for the Impact of Communication Impairment on Noninvasive Ventilation Therapy for Acute Respiratory Failure: A Focused Review. *Critical Care Explorations*, 2(6):e0121–e0121.