RESEARCH ABSTRACT

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KEY WORDS- ( Intensive care unit, ventilator, communication, intubation, extubation, weaning
   monitoring, twill tape, suctioning, pressure points, enteral feeding,
   arterial blood gas)

1. Introduction:
   Abraham Maslow’s Hierarchy of needs- the physiological needs are at the first level of
   needs. Unless you fulfill your physiological needs you can’t address to higher needs, so maintain
   patient airway for patient on mechanical ventilator becomes important.
   Research is needed to refine techniques to identify patients at greatest risk for adverse
   response to suctioning, so also with other procedure that need to be performed skillfully in the
   intensive care unit (ICU).

2 Need of the study:-

   Caring for the most critically ill patients requires a complex system of staffing,
   infrastructure and steady supply of resources. Mechanically ventilated patient requires expert
   nursing care from nurses. If not, the patients are exposed to life threatening problems.

   Ventilation-associated pneumonia (VAP) is the most frequent infection occurring in
   patients who are mechanically ventilated after admission to the intensive care unit (ICU). In a
recent large European observational study, almost 25% of patients developed an ICU-acquired infection, and the respiratory site accounted for 80% of these infections. The attributable mortality of VAP continues to be debated, but VAP can be linked with increased duration of ventilation, ICU and hospital length of stay, and significantly increased costs. Many government hospitals have ICU’s and nurses working in ICU’s who do not have additional training in intensive care unit. Majority of the nurses are GNM. There is no orientation program for nurses before posting them in ICU hence they tend to provide only basic care to ventilated patients. Advance level of knowledge and skills are lacking in them which affect their level of confidence hence researcher, felt the need to develop standard operating protocols for the nurses working in the intensive care unit.

The researcher while checking the admission records of ICUs for the last five years have found that the mortality rate was not coming down it remained somewhat same in the whole period.

She also observed that many patients receiving ventilator support needed re intubations, because of blocked tubes by crusted mucus secretion furthermore, aspirated secretions were blood stained and above all ventilator support was prolonged for various other reasons than that for which it was prescribed. She also found that patients developed bed sore and also landed into problems like malnutrition.

The admission of a family member into a critical care unit can be frightening experience for family members after the combination of patients condition and an initial perception by relatives of a high tech, intimidating area can cause a great deal of stress for them. Traditionally nurses carry out a wide variety of functions, some of the functions can be seen as primary to nurses role and some are secondary to nurses role named as care and cure function. But today’s concern is “family centered care” where health personnel are in a position to provide care not only to patients but also to family as a whole.

Hence the researcher felt the need to prepare a protocol for the staffs regarding care for the patient who is ventilated in Intensive care unit.
4. Statement of the problem:
“A Study to develop and assess the effectiveness of Standard Operating Procedures/ Protocols on knowledge and practices of nurses regarding care of patients on ventilator in an intensive care unit at selected government hospitals in the state of Maharashtra”.

5. Objectives of the study.
   1) To develop and validate the standard operating protocols regarding care of patient on ventilator.
   2) To assess the knowledge of the nurses before and after implementation of the protocols and teaching.
   3) To assess the practices of the nurses before and after implementation of the Protocol and teaching.
   4) To find out the association of sociodemographic data of the nurses with the knowledge and practices of the nurses before and after teaching and implementation of the protocols.
   5) To find out the correlation between the knowledge and practices of the nurses regarding care of patient on ventilator.

6. Research Approach & Design: - The approach used was descriptive evaluative approach. A pre experimental one group pretest post test time series design was used. On day one pretest knowledge and practices were assessed followed by teaching and implementation of protocol. Post test knowledge was assessed on day 5th and day 30th. Post test observation of practices were assessed on day 5th, 6th, 7th and day 29th, 30th and 31st. Self-reported practice were assessed on day 5th.

6.1 Population:
The target population, were the nurses working in the intensive care units of all the government hospitals under Director of Medical Education (DMER).

6.2 Sample and Sampling technique
Sample size: Sample size consisted of 220 nurses working in intensive care units.
Sampling technique: Purposive sampling technique was used to select the nurses.
6.3 Inclusion criteria:
Nurses working in the intensive care units for more than three months, directly involved in patient care and who were willing to participate in the study.

6.4 Exclusion Criteria: Head nurses who were not directly responsible for patient care.

6.5 Tool and Technique
Standard Operating Protocols to care a patient on ventilator, Teaching Module, A structured knowledge questionnaire, Inventory checklists, and observation checklists, were used as tools and Self-reporting technique was used to assess knowledge and reported practices. Observation technique was to observe the practices.

6.6 Validity and Reliability:
Validation of the protocols was done by six experts in the intensive care units; validity of questionnaire was done by 10 experts from various fields in nursing. Reliability was calculated using Cronback ρ formula. The ‘r’ value was 0.80. Reliability for the observation check list and inventory checklist, tested by ‘Inter Rater Reliability Test’ calculated value ranged between 0.82 to 0.99 for all the checklists which indicated high reliability.

6.8 Data gathering process:
Period of data collection was from 21 January 2013- 30th October 2013. Researcher grouped the hospitals of nearby distance places together so it was convenient to visit them for posttests and observations. Day one purpose of the study was explained, written consent of the nurses was taken, and the pretest on knowledge questionnaire was given in a group. The questionnaire was filled within 90 minutes before the shift began and then they were observed for their practices, the inventory check list was given to them to mark the reported practices. This was followed by teaching of two hours in the morning for the nurses who had afternoon shift, night shift and day offs. While teaching for morning shift nurses was done in the afternoon, after teaching they were also given a copy of the protocols. Post test for knowledge assessment was taken on 5th day and 30th day. The nurses were observed for their practices from day fifth to day seventh of teaching, three observations for practices was observed and marked as post test P1,P2,P3. Similarly the practices were observed between day 29th to 31st day of teaching three times and the average score as P4 was analyzed. The nurses were also given inventory checklist to mark the reported practices between day 5th to day 7th as post test -1.
7. Analysis, Interpretation and Discussion -

7.1 Region wise distribution of nurses

Out of 220 nurses studied 42 (19 %) each were from Konkan and Nagpur region respectively. 50 (23%) were from Pune region, 53(24%) were from Aurangabad region, 21(10%) were from Amravati region and only 12(6) % were from Nashik region.

7.2. Analysis of demographic data of the nurses:
Majority 73 (33%) of nurses belonged to the age groups of 26-30 years and 36 years and above ,minimum 24(11%) were from age group 21-25 years. 193 (88%) were females and 27(12%). were males The nurses with Diploma in general nursing were 190(86%), while MSc nurses were three(1%) all over Maharashtra. Additional qualification such as CVTS course was done by only one (0.45%) nurse and ICU training by two (90%) nurses. Majority 74(34%) of nurses had experience of three years and above.

7.3 Analysis of knowledge:-
7.3.1 Overall Knowledge Score
The mean knowledge score of nurses in all protocols regarding care of patient on ventilator. during post test -1 ranged from 2.46 to 8.75 and the ‘p’ = < 0.0001. Post test-2 the mean knowledge score ranged from 2.20 to 8.23 and the ‘p’ = < 0.0001 except in communication ‘p’ value was 0.45.

7.3.2 Region wise comparison of knowledge score with pretest, post test-1and post test -2 of the nurses.
The differences between the mean knowledge score was significant during post test -1 and post test -2 in all the regions as value of ‘p’ ranged from < 0.0001 to 0.004 except in Nashik region as p = 0.88, Pune region and Amravati region as p = 0.06 during post test -2.

7.3.3 -Testing of hypothesis with knowledge scores.
Research Hypothesis accepted
The mean knowledge score of nurses after post test-1 and post test -2 was significant at 0.005 level as ‘p’= < 0.0001.

7.3.4- Association of knowledge score with selected sociodemographic variables
Age, gender, educational qualification of nurses and years of experience in ICU did not have any association with knowledge regarding care of patient on ventilator.
7.4 Analysis of Observed practices:-

7.4.1 Over all observed practice scores

Overall mean observed practice score according to the checklists after the implementation of protocols and teaching was higher than the pretest during P1, P2, P3 and P4 where ‘p’ value was =< 0.0001 except in maintaining routine work in ICU in post test - P2 the ‘p’ value was 0.31 which was not significant.

7.4.2 Region wise comparison of observed practice score during pretest post test - P1, P2, P3, and P4 in the nurses.
There was a significant change in the mean observed practice score of nurses in all the regions as ‘p’ value ranged from < 0.0001 to 0.009 at 0.05 level of significance

7.4.3 Testing of hypothesis with observed practice scores

The mean practice scores of nurses during P1, P2, P3, P4 was significant at 0.05 level as ‘p’ = < 0.0001.

7.4.4 Association of observed practices scores with selected demographic variables

Age and years of experience did not have any association with observed practices were as there was association between gender, educational qualification and observed practices.

7.5 Analysis of reported practices:-

7.5.1 Overall reported practice scores.

Mean reported practice score of nurses after the implementation of protocols and teaching was higher than the pretest at 0.05 level of significance as ‘p’ = < 0.001

7.5.2 Region wise comparison of reported practices scores of the nurses during pretest and post test – 1.

There was a significant change in the mean reported practice scores of the nurses in all the areas studied during pretest and post test-1 at 0.05 level of significance as p = < 0.001

7.5.3 Testing of hypothesis with reported practices score.

The change in mean reported practice score of nurses during post test -1 was significant at 0.05 level of significance as ‘p’ = < 0.001

7.5.4 Association of reported practices scores with selected demographic variables of the nurses

Age, gender, educational qualification of nurses and years of experience in ICU did not have any association with reported practices of nurses.
10.6- Correlation between the knowledge and practices of the nurses regarding care of patient on ventilator.

Pretest revealed that there was very low correlation between the knowledge and overall practices as ‘r’ is 0.11 and low correlation between Knowledge and observed practices as ‘r’ is 0.15. No correlation between Knowledge and reported practices as ‘r’ is 0.06. Post test findings showed that there was very low negative correlation between the knowledge and overall practices, Knowledge and observed practices and Knowledge and reported practices as ‘r’ = -0.10, -0.04 and -0.12 respectively. Statistically no significance was found hence there was no correlation over all between knowledge and practices.

11. CONCLUSION:-

The analysis showed significant increase in the knowledge and practice score among all the six regions. The researcher found that majority of nurse had average to good knowledge but were not practicing it. Practice needs more attention and supervision. As rightly said “practice makes man perfect”. The areas like suctioning change of twill tape, mouth care and back massage needs more supervision.