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A Descriptive Study to assess the knowledge of staff nurses regarding ventilator associated pneumonia (VAP) among patient admitted in intensive care unit at selected hospital, Jalandhar (Punjab)

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Abstract: *Ventilator associated pneumonia (VAP) is the most common nosocomial infection, with the prevalence rates ranging 10% to 70% in intensive care units. It is the sub type of hospital acquired pneumonia which occurs in public who are on mechanical ventilation through an endotracheal or tracheostomy tube for at least 48 hours with reported incidence of 6-20 times higher in these patients. A descriptive study was conducted to assess the knowledge of staff nurses regarding ventilator associated pneumonia among patients admitted in intensive care units of selected hospitals of city Jalandhar. The aim of the study was to assess the knowledge of staff nurses regarding VAP among mechanically ventilated patients. The objectives of the study were to assess the knowledge of staff nurses regarding VAP, to find out the association of knowledge of staff nurses regarding VAP with selected socio demographic variables like age, gender, working area, working experience, professional qualification, in-service education.. Sample size of present was 50 and convenient sampling technique was used for data collection. A self structured multiple choice questionnaire was used to assess the knowledge of staff nurses regarding VAP. Results showed that no one have excellent knowledge regarding ventilator associated pneumonia, 6% has good knowledge,28% has average knowledge and 66% has below average knowledge among staff nurses regarding ventilator associated pneumonia. It was concluded from present study that staff nurses need knowledge regarding VAP.*

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I. Introduction

Oxygen is one of the most important element required to sustain life, without it our health begins to suffer and /or we die. Unhealthy or weak cells due to improper metabolism lose their natural immunity and our thus susceptible to infections and lead the various kinds of serious health problems. Most of us suffer from oxygen deficiency due to improper breathing. For proper breathing we can put the patient on ventilator to provide proper oxygen. Some complications occur with ventilator which of one is ventilator associated pneumonia.

Ventilator associated pneumonia is defined as a type of pneumonia in a patient receiving mechanical ventilation that was not present at the time of admission to hospital or that other 48 hours after intubation and mechanical ventilation. It's characterized by new or a progressive pulmonary infiltrate, fever, leukocytosis and purulent tracheobronchial secretions.[1]

Ventilator support is a well known risk factor for nosocomial pneumonia. The incidence of nosocomial pneumonia is 6 to 20 times higher in patients treated with continuous ventilator support. Nosocomial pneumonia develops in mechanically ventilated patients at a rate of one to three percent per day of mechanical ventilation.[1]

In critically ill patients, several factors associated with intubation and mechanical ventilation alter normal defence against infection. The placement of an artificial airway such as endotracheal tube or a tracheostomy tube alters the host defense and contribute to the development of pneumonia.[2]

Nosocomial infection are a significantly burden on patients admitted to the hospital who are already ill. Hospital acquired pneumonia is the second most common nosocomial infection after urinary tract infection but ventilator associated pneumonia is the most common nosocomial infection in intensive care unit. In order to reduce the rate of VAP, sound knowledge of the condition is essential for early recognition and effective treatment through a combined effort between nursing staff.[3]

Although, VAP is a serious problem found in ICU in developing countries, the exact magnitude as well as intensity in developing countries is not clear. It is therefore reasonable querying the situation while the rate of VAP in countries with well equipped ICU, good number of ICU experts and advanced medications have an

incidence rate of between 6%- 68.5%. Since VAP is preventable and prevention of VAP have been shown internationally to reduce its incidence as they are at the patient's bed side 24 hours daily providing nursing care and therefore play an important role in prevention of VAP.[4]

If nurses do not have enough knowledge on measures proven to decrease VAP rates they may not have the necessary confidence to take action and make decision regarding such practices. Patient recovery may be delayed and increased risk of complication from mechanical ventilation such as VAP which are risk that can be prevented. Most nurses practices nursing according to what they learned in nursing school as well as their experience in practice. If one takes consideration the number of changes that occur in nursing practice on regular basis, its essential to keep update and have knowledge of the best current practice. The prevention and control of VAP in ICU are dependent on the education and sensitization of ICU staff members towards the problem and on the availability of equipment necessary for controlling cross infection between environment, health providers and patients. Thus, the idea of performing a study when the opportunity came stroke the researcher's mind

II. Research Methodology

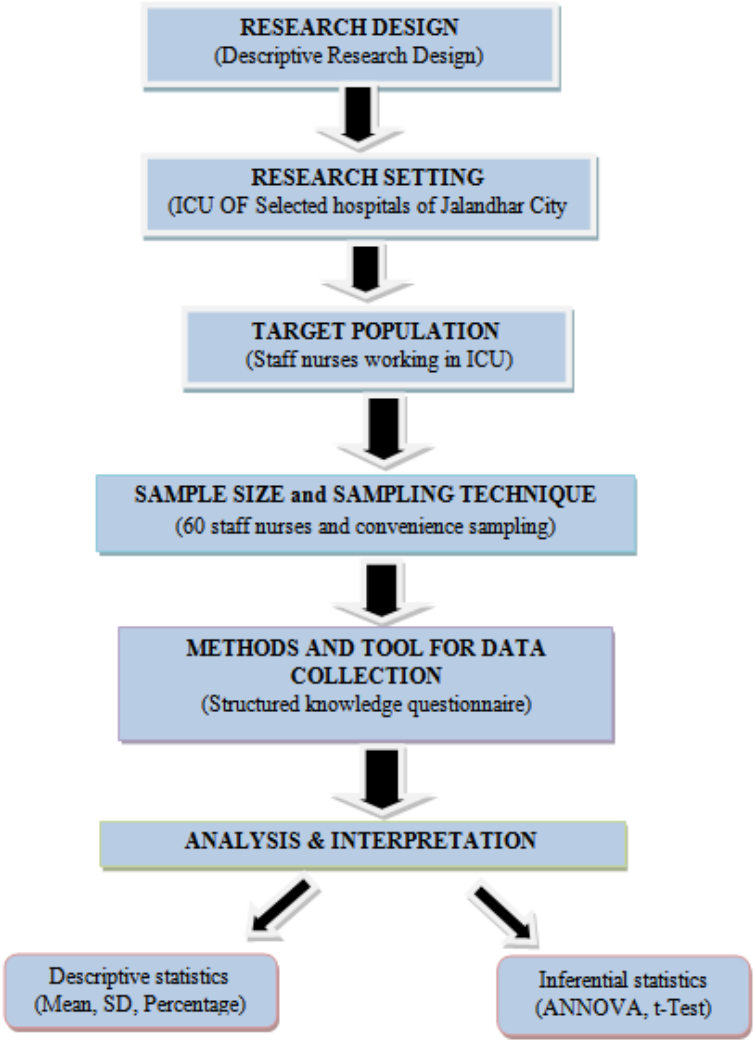

Figure1. Schematic presentation of research methodology

Study Design: Descriptive study design was used in this study
Study location: ICU of Selected hospitals of Jalandhar City
Study Duration: Study was conducted in the month of June 2016
Sample size: Sample size was 50 ICU staff nurses
Subject and selection method: Staff nurses working in ICU and convenience sampling technique was used.

Inclusive criteria
1. Sample who are willing to participate
2. Who are able to communicate
3. Who are present at the time of data collection
Exclusion criteria
1. Who are not present at the time of data collection
2. Who are not willing to participate
Procedure Methodology
After written informed consent was obtained, a structured questionnaire was prepared and used to collect the data of ICU staff nurses. The tool was divided into two parts.
1. Socio demographic variables such as: age, gender, experience (in years), professional qualification, working area and source of information regarding knowledge VAP
2. Structured questionnaire consist of 30 questions which was further divided in to 5 areas .i.e. definition, etiology, clinical manifestations, diagnosis, role of nurse in prevention and complications.
Each question has 4 options and one question carry 1mark
Statistical Analysis
Data Analysis was done by descriptive and inferential statistics such as mean, median, mode, percentage, standard deviation, degree of freedom and "t" test value.

III. Result

Table 1: Level of knowledge of staff nurses regarding Ventilator Associated Pneumonia

Level of knowledge	Score	Pre test	
		N	%age
Excellent	>24	0	0
Good	20-24	3	6
Average	15-19	14	28
Below average	<15	33	66

Maximum score= 30
Minimum score=0

Table 1: depicts that maximum staff nurses have below average knowledge(66%), average knowledge have (28%), good knowledge have (16%) and no one have excellent knowledge .

III. Discussion

Objective 1: To assess the knowledge of staff nurses regarding VAP. In the present study results showed that out of 50 staff nurses, 0% have excellent knowledge, 6% has good knowledge, 28% has average knowledge and 66% of staff nurse has below average knowledge regarding Ventilator Associated Pneumonia.
The present study objective was supported by a study on "Knowledge of staff nurses of critical care unit regarding prevention of Ventilator Associated Pneumonia (2010)". Results of study showed that 9% of staff nurses have excellent knowledge, 13% has good knowledge and 30% has average knowledge and 48% poor knowledge.

Objective 2: To find out the association between knowledge score of staff nurses regarding Ventilator associated Pneumonia with selected Socio demographic variables. The present study showed that there were association between the knowledge score with socio demographic variables i.e. age, gender, work experience and in-service education. It showed that these socio demographic variables put effect on knowledge of respondents.

IV. Conclusion

The conclusion drawn on basis of findings of the study was as follows:

Ventilator associated pneumonia is the most common nosocomial infection with high prevalence rates in intensive care units.ICU nurses have been found to be in best position to put knowledge into practice as they are at the patient's bed side 24 hours daily providing nursing care and therefore play a important role in the prevention of Ventilator associated pneumonia. Nevertheless nurses need to have awareness of the problem as well as knowledge so as to adhere to such practices.

The conclusion drawn from findings of the present study revealed that staff nurses had excellent (0%), good (6%), average (28%), below average (66%) knowledge regarding Ventilator associated pneumonia. All the variables including the study i.e. age, gender, experience (in years), in-service education are significant on knowledge of staff nurses regarding Ventilator associated pneumonia rather than professional education and working area are non significant.

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