INTRODUCTION

At the beginning of the 20th century infectious diseases were the leading cause of death worldwide. By the end of 20th century in most of the developed world mortality from infectious diseases had been replaced by mortality from chronic illness such as heart diseases (31.4%), cancer (23.3%) stroke(6.9%), chronic lung diseases (4.7%), unintentional injuries (4.1%), pneumonia/influenza (3.7%), diabetes (2.7%), suicide (1.3%), chronic kidney disease (2.7%), chronic liver diseases (3.7%). Worldwide obesity rates have doubled in the last 3 decades, even as blood pressure and cholesterol levels have dropped. Over 1 million people worldwide are alive on dialysis or with a functional graft. Critical illness conditions had lead to death. Stroke has a greater disability. Each year over 130,000 people in England and Wales have stroke with 10,000 of those being under retirement age. In UK, there are about 268,000 heart attacks each year. Of those about 30% are in people aged under 65. In India, cardio vascular diseases are estimated to be responsible for 1.5 million deaths annually. Indeed it is estimated that by 2020, cardio vascular diseases will be the largest cause of morbidity and mortality in India. 80% of diabetics in the world will be present in the developing countries like India and chronic kidney disease (CKD) is a global threat to health in general and developing countries.

The advances in medical technology means we are living longer and surviving conditions that would have resulted in early death for many people a number of years ago. some of the advanced technology in the health care are cardiac pacing, defibrillation /cardio version, intensive care equipment for life support and emergency resuscitation, crash cart, intra aortic balloon pump, ventilator which assists with or controls pulmonary ventilation in patients who cannot breathe on their own.

Rapid developments in intensive care medicine have made mechanical ventilation an essential method in the resuscitation and comprehensive treatment of critical care patients. About 80% of patients in intensive care units are reported to require mechanical ventilation, and nursing care of patients receiving mechanical ventilation has become increasingly important, including nurse-led weaning of ventilator patients. While hospitals in other countries may rely on trained respiratory care therapists to assess and care for mechanical ventilation systems, in the intensive care units of China, nursing staff especially trained in basic knowledge and techniques of intensive care medicine provide the main care for critically ill patients, including airway care for patients requiring mechanical ventilation. Mechanical ventilation is often a life saving intervention, Mechanical ventilation (MV) is one of the core components of supportive therapy for critically ill patients and is often lifesaving. In many health care systems prolonged ventilation as part of intensive care is a limited resource (in that there are only so many patients that can...
receive care at any given moment). It is used to support a single failing organ system (the lungs) and cannot reverse any underlying disease process (such as terminal cancer). The use of mechanical ventilation in intensive care is a vital component of the care critically ill patients. Ventilators have come a long way from the simple bellows type often visualized when discussing life support machines. Today’s ventilators are far more complex. They are controlled by microprocessors and offer distinct advantages over those used during the early days of intensive care. While these machines are highly complex, the principles involved in their function and use are based on quite simple concepts which can be understood by those new to this area of patient treatment. Mechanical ventilation is a process by which gases are moved into and out of the lungs by means of a ventilator, a machine that delivers a controlled flow of gas to a patient’s airway. The reasons for mechanical ventilation include respiratory arrest, acute lung injury, critical illness and respiratory support following surgery. Ventilatory management has changed over the past few decades with the advent of high frequency ventilator for which a multidisciplinary approach is essential. Caring for the patient on mechanical ventilation has become an integral part of nursing care in critical care unit. Critical care nursing focuses upon care of the critically, or acutely ill patient. Critically ill patients are unstable, as their condition can suddenly change at any time. Critical care nurses work in intensive Care units (ICU), critical care units(CCU),emergency departments and progressive care units(PCU).Positive patient outcomes depends on an understanding of the principles of mechanical ventilation and the patient care needs as well as open communication among members of the health care team about the goals of therapy, weaning plans ,and patient tolerance of changes in ventilator setting. Current research about nursing evaluation of mechanical ventilation mainly focuses on analyzing and discussing single influential factors, while studies of comprehensive nursing interventions for mechanical ventilation systems are lacking. This may be due in part to the fact that nursing staff may not be responsible for mechanical ventilation systems in some countries, while in China, ICU nurses are solely responsible for mechanical ventilation systems and related patient care. Therefore, the design of an appraisal form to evaluate the comprehensive clinical effectiveness of adult mechanical ventilation systems may provide a valuable assessment tool for critical care nurses responsible for mechanical ventilation administered to patients in intensive care units in China. A study about the incidence of mechanical ventilation in a large population of patient admitted to the ICU reported that 49% of the 3884 patients included in the APACHE III database had received mechanical ventilation, bus also noted that a significant percentage (64%) of these patients were in the post operative period and therefore need mechanical ventilation for less than 24 hours. In contrast, an observational study performed in 48 Spanish medical surgical ICUs found that 46% of patients were mechanically ventilated at least for 24 hours. In 1996, a one-day point prevalence study was carried out with 4,153 patients admitted in 412 ICUs from 8 countries, showing that 39% of patients required mechanical ventilation recently, it has been reported, in a prospective study including 15, 757 patient from 20 countries, that 5183 patients (33%) required mechanical ventilation. A descriptive study to assess the knowledge and practices of nursing personal regarding immediate post operative care of cardiac surgery client on ventilator in Cardio Thoracic Intensive Care Unit in selected Hospitals of Hyderabad among thirty nurses working in CTICU with at least 6 months experience by administering observational checklist and questionnaire revealed that majority of nurses had below average knowledge and practices and one third of nurses had above average knowledge and practices. Patient advocacy refers to the nurse acting on behalf of, and in the best interest of, the patient. Critical care nurses respect patient values, beliefs and rights. Educating the patient and family so they can make informed choices about care is an example of patient advocacy. Critical care nurses must perform complex physical assessments as part of monitoring patient condition and status. Nurse must be well trained and should develop sound knowledge and practical skills in taking care of client with mechanical ventilator in order to develop them as effective potential and competent nurse practitioner. Expertise knowledge is required for nursing in critical care setting in order to be proactive. Therefore, it is essential for nurses to have relevant skills and understanding required for their role as they are the key of information to patients, relatives and other members of interdisciplinary team. With the right knowledge nurses can reduce the risk of complications, the number of critical care bed days and improve patient outcome. Critical care knowledge among the nurses regarding the strive of understanding the seamless care and demonstrate real implements of interventions for the improvement of clients who are aid on ventilator. Patients on mechanical ventilator are totally depend on nurses so nursing personnel have a major role to play in sustaining their lives by meeting health requirements. Nursing interventions is required their needs with specialized skill in helping clients from complications and reducing mortality.

MATERIALS AND METHODS

Descriptive survey approach has been used to carry out the present study and after obtaining formal permission from the authorities of Yenepoya Medical College Hospital, Deralakatte, the investigators selected 50 nurses by adopting purposive sampling technique and the duration of data collection period ranges from 25-4-2013 to 10-5-2013. The investigators gave self introduction, explained the purpose of the study and the subjects willingness to participate in the study was ascertained. The subjects were assured anonymity and confidentiality of the information provided by them and written informed consent has been obtained then administered structured knowledge questionnaire. The data analysis includes descriptive and inferential statistics such as mean, percentage, standard deviation. Chi square test was used to determine the association between knowledge of staff nurses and demographic variables.

RESULTS AND DISCUSSION

The findings of the present revealed that 32 (64%) subjects belong to the age group of 21-24 years and majority of the subjects 34(72%) were females; in relation to educational status most of the subjects 36(72%) were completed GNM and 16(32%) subjects had experience in ICU where as 49(98%) had not attended any in service education related to mechanical ventilation. Present study findings are consistent with the study.
findings of Darshan K, Krishnan P, Krishnan R.N (2009) who assessed the knowledge of staff nurses on mechanical ventilation and found that most of the staff nurses 89.1% subjects were in the age group of 20–25 years, 71.7% subjects were females, 94.6% subjects were diploma holders, 22% subjects had experience in ICU and 61.96% of them had not attended any in-service programme.\(^{(10)}\)

**Table 1** Mean and standard deviation of knowledge score on mechanical ventilation

<table>
<thead>
<tr>
<th>SL.NO</th>
<th>Knowledge aspect</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Information</td>
<td>2.8</td>
<td>0.68</td>
</tr>
<tr>
<td>2</td>
<td>Functioning of mechanical ventilation</td>
<td>4.16</td>
<td>0.28</td>
</tr>
<tr>
<td>3</td>
<td>Nurses role</td>
<td>6.44</td>
<td>0.56</td>
</tr>
<tr>
<td></td>
<td>Overall</td>
<td>13.4</td>
<td>1.55</td>
</tr>
</tbody>
</table>

In the present study majority of the subjects 33(66%) were having poor knowledge, 16(32%) subjects were having average knowledge and only one subject (2%) had good knowledge regarding mechanical ventilation (Table 1, Fig 1, Fig2) and are similar to the study findings of Darshan K, Krishnan P, Krishnan R.N (2009) who assessed the knowledge of staff nurses on mechanical ventilation and found that (34.78%) of staff nurses had average knowledge.\(^{(10)}\) Also present study findings are supported by the study findings of Chinna Devi M(2006) who found that staff nurses had inadequate knowledge regarding mechanical ventilation(40.66%\(^{(11)}\)).

The obtained chi square values of age, gender, educational qualification, experience in ICU and attended in service education related to mechanical ventilation (5.30, 0.547, 3.935, 5.38, 1.1586) were less than the table value and there was no significant association found between the demographic variables and the knowledge score.\(^{(12)}\)

**CONCLUSION**

The present study findings identified that there is a need of advanced technical education to make the staff nurses highly aware of care of patients on ventilator and to further widen their cognitive map so as to get fruitful results.

**Acknowledgement**

The authors would like to acknowledge the authorities and participants of the study for their extended cooperation and support.

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