Nurse's Perception about Nurse's Independent Actions in Preventing Ventilator Associated Pneumonia (VAP)

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Abstract: *Ventilator associated pneumonia (VAP) is a nosocimial infection that results in pneumonia after 48 hours and more after mechanical ventilation. Nurses in terms of performing nursing care are responsible for the prevention of VAP. In this case the nurse's role is very important in taking independent measures of VAP prevention so that VAP risk can be minimized. This study aims to explore nurses 'perceptions about nurses' independent actions in VAP prevention at Mitra Medika General Hospital, Medan. The design of this study is a qualitative research with a phenomenological approach conducted from January 2019 to May 2019. The method of data collection is by conducting focus group discussions (FGD). Participants involved in this study were 28 participants taken through purposive sampling. Analysis of data using qualitative methods. The results showed that there were six themes: 1) nurses' knowledge of VAP in general was still lacking, 2) there were barriers to the implementation of nurses' independent actions in VAP prevention, 3) lack of experience of nurses in taking independent actions of VAP prevention, 4) the importance of establishing self-action protocols nurses in VAP prevention, 5) nurse independent actions of nurses needed in VAP prevention, 6) implementation strategies needed in developing nurses' independent actions in VAP prevention. This research has produced nurses' perceptions about nurses' independent actions in VAP prevention. Nurse independent action is needed to prevent VAP as well as increase nurses' knowledge and compliance as well as to make a decrease in the incidence of VAP in patients with ventilators.*
Keywords: Ventilator Associated Pneumonia (VAP), Knowledge, Compliance

I. Introduction

Ventilator associated pneumonia (VAP) is a problem that occurs when patients receive treatment in intensive care units (ICU) where 8-28% occur in patients who are mechanically ventilated (Chastre, 2002). Ventilator associated pneumonia (VAP) is also known as a nosocimial infection that results in pneumonia after 48 hours and more after installation of mechanical ventilation (Magnuson, 2013).

Patients who are installed with mechanical ventilation are at 28% risk of VAP, and also account for 86% of cases of nosocimial infections and VAP about 3 to 10 times (Augustyn, 2007). The indicated time of VAP also varies based on the length of mechanical ventilation installed, where 3,387 patients in 45 days of treatment with mechanical ventilation will be exposed to the VAP within the first 9 days, and predicted the total number of VAP events on the first and second days is 5.3 and 8.3 events (Marine Giard, 2008). The incidence of VAP also increased by 41 cases from 1000 mechanical ventilation use (Porhomayon, 2017).

Nurses in terms of performing nursing care are responsible for the prevention of VAP. In this case the nurse's role is very important in taking independent measures of VAP prevention. Assessment and intervention by nurses are seen from risk factors for aspiration during intubation, frequent intubation, abnormal body temperature, large amounts of sputum, high or low leukocytes and other markers of infection such as C-reactive protein (CRP) and procalcitonin.

Nurses as providing 24-hour care to patients must understand in the implementation of the nurse's independent actions in the prevention of VAP, so what is needed is nurses' knowledge so that the prevention of VAP properly implemented fiber compliance levels can be maximized.

Nurses' knowledge in VAP prevention is influenced by the level of education, experience of nurses and training (Korhan, 2013). However, other opinions mention the knowledge of nurses in the prevention of VAP is not absolutely caused by factors of education, tenure and training (Rifai, 2016). Knowledge in implementing VAP prevention will be a barrier to compliance in VAP prevention so efforts should be made to increase knowledge (El Khatib, 2010). qualitative research.

II. Methods

This type of research is a qualitative study using focus groups discussion (FGD) to collect data related to research objectives. The sampling technique used in this study was purposive sampling used to identify nurses about independent actions in VAP prevention. The number of participants in this study were 28 participants which consisted of 1 room head, 8 team leaders, 19 implementing nurses. Then the researchers also took participants 1 head of nursing sub-division, 1 infection prevention and control committee, 1 nursing committee and 1 clinical instructor.

Data collection tools used in this study were researchers, in addition to FGD guidance and voice recorders. Researchers as an important data collection tool to have the ability to conduct interviews to obtain data that is real and real. Another data collection tool is the FGD guide on nurses' perceptions about independent actions in the prevention of VAP in the ICU room of Mitra Medika General Hospital, Medan. FGD Guidelines have been tested for content validity by conducting discussions with supervisors and three experts in their fields before being used for data collection.

The FGD was carried out for 60 minutes in a group of 28 participants. Before conducting the FGD, the researcher first gave an informed concern to the participants. Before the FGD was conducted, the researcher had carried out many interactions with the participants involved in this research so that the researcher had known the characters of the participants.

In this study data triangulation was also carried out. Data triangulation techniques enable researchers to obtain different but complementary data on the same topic. The triangulation technique used in this study was carried out by collecting data from several data sources in the study such as data from nurses and leaders of the Medan Medika General Hospital.

Data analysis begins immediately after the FGD is conducted All audio recordings are transcribed verbatim using anonymous participant identification. Data are analyzed in the form of themes by finding similarities and differences in data, then grouping them into broader, more abstract, and comprehensive categories of meaning (Lobiondo Food & Haber, 2014).

III. Results and Discussion

3.1 Results
Participant Characteristics

There were 28 participants involved in this study. Participants consisted of ICU room nurses and nursing management. The age of participants is mostly early adulthood, 19 people. Partispan gender is mostly female as many as 18 people. Nurse education varies consisting of nurses with D3 nursing as many as 11 people, nursing education as many as 4 people and nurse education as many as 13 people. The most dominant work experience of participants 1 to 2 years is 9 people. More detailed participant data can be seen in Table 1.

Table 1. Frequency Distribution of Participant Demographic Data (n=28)

Characteristics	f	%
Age		
Late teens	8	28.6
Early adulthood	19	67.9
Late adulthood	1	3.6
Amount	28	100,0
Gender		
Male	9	32.1
Girl	18	64.3
Amount	28	100,0
Last education		
D3 Nursing	11	39.3
Bachelor of Nursing	4	14.3
Ners	13	46.4
Amount	28	100,0
Work experience		
1 to 3 months	1	3.6
4 to 12 months	2	7.1
1 to 2 years	9	32.1
2 to 3 years	7	25
3 to 4 years	4	14.3
4 to 5 years	5	17.9
Amount	28	100,0
Job status		
Head of the room	1	3.6
Team leader	5	64.3
Managing nurse	18	17.9
Head of nursing	1	3.6
Nursing Committee	1	3.6

IPCN	1	3.6
CI	1	3.6
Amount	28	100,0

Theme 1: Nurse knowledge about VAP in general is still lacking
The nurse's knowledge in implementing VAP prevention measures that still lacks consists of A) nurses' knowledge about the VAP concept which is lacking where 1) general concept of VAP's knowledge is still lacking, 2) new nurse's knowledge which is still minimal about VAP. B) nurses' knowledge about VAP prevention independent measures where 1) new nurses do not understand the actions taken in VAP prevention.
Nurses' knowledge of VAP prevention in general is still lacking expressed by some participants such as the following expression:
'... VAP may be caused by bacteria when we treat patients with ventilators. (Participant 10)
' ' ...... don't really understand about the concept of VAP, because indeed this has to be studied intensively and requires resource persons to teach it ... (Participant 4)
.... '.... because you don't really understand the rationale, such as the position of the head, the administration of medicine, and what else is forgotten ...' '(Participant 3)

Theme 2: There are obstacles to the implementation of the nurse's independent actions in VAP prevention
Obstacles to the implementation of independent nurse actions in VAP prevention consist of A) unclear VAP precautionary information for nurses, where 1) limited junior nurse knowledge, 2) limited educational information flow in VAP prevention, 3) VAP prevention action information for junior nurses limited. B) the tools used for VAP prevention have not been maximized, where 1) the tools not available in VAP prevention, 2) the lack of training in the use of tools used for VAP prevention, 3) the nurses' skills that are still lacking in the use of tools. C) the structure and process of the nurse's independent action in preventing VAP is not optimal, where 1) the workload is still high, 2) the absence of guidelines for independent action taken, 3) the limited SPO of the independent action taken, 4) the nurse's compliance is still lacking in VAP prevention, 5) nurse skills are still lacking in VAP prevention measures.
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.... '.... because you don't really understand the rationale, such as the position of the head, the administration of medicine, and what else is forgotten ...' '(Participant 3)

Theme 3: The nurses' lack of experience in taking independent measures of VAP prevention
The experience of nurses in conducting independent VAP prevention measures consists of: A) the experience of junior nurses is lacking, where 1) junior nurses who only have experience of senior actions, 2) the experience of actions taken is not in accordance with knowledge. B) nurses' experience in using VAP prevention tools is not yet maximal, where 1) the tools used are rarely replaced, 2) the use of tools that are not in accordance with knowledge.
The lack of experience of nurses in taking independent measures of VAP prevention can be seen from the following expressions:
' ' ... yes, take care as usual, but don't know yet what action can be taken to prevent VAP, just limited to knowledge ... ' ' (Participant 3)
' '. if the rheuse should be changed every 6 months' (Participant 5)
' ' .... is only limited to maintenance, considering that it requires complex care including VAP prevention ... ' ' (Participant 14)
Theme 4: The importance of a nurse's independent action protocol in VAP prevention.
The importance of a nurse's independent action protocol in VAP prevention consists of A) Nurse's independent action in VAP prevention is more maximal, where 1) Nurses are more directed in taking VAP prevention independent action, 2) Senior nurses are more confident in teaching junior nurses in VAP prevention, 3) Improving nursing care, 4) Maximizing nurse work, 5) All actions can be accounted for, 6) Junior nurses are more focused with the guidance in preventing VAP, 7) Junior nurses more easily take action. B) improving the quality of hospital services, where 1) increasing Hospital promotion, 2) Reducing mortality, 3) Reducing hospital costs, 4) Patients not affected by nosocimial infections, 5) Families and patients happy, 6) Using ventilators to shorter.

The importance of establishing a nurse's independent action protocol in VAP prevention can be seen from the following expression:

'' …… These nurses need guidelines that really aim to prevent pneumonia like that ... '' (Participant 6)
'' .... important and important, especially for this new child right, we just learned a lot, now while we don't have a guide, we only participate in with the seniors, it still floats ... '' (Participant 11)
'' ..... there are protocols that are sure to be easier and more directed, new and senior are easy to teach ... (Participant 7)

Theme 5: Nurse independent actions required for VAP Prevention
Nurse's self-action needed in VAP Prevention consists of A) Nurse taking care in VAP Prevention through respiratory care, where 1) Nurse's independent action in monitoring the Cuff used by the patient, 2) Independent action in weaning, 3) Nurse's self-action in performing oral care . B) Independent measures of VAP prevention through the process of intubation, where nurses independently act in intubating. C) Independent measures of prevention through patient nutrition, where the nurse's independent actions in feeding through NGT. D) The act of taking precautions through the equipment used by the patient attached to the ventilator, where 1) The nurse's independent actions in the storage of tools, 2) The nurse's independent actions in controlling the devices that are already installed, 3) The nurse's independent actions in the use of tools and materials during the treatment process.
The nurse's independent actions required in VAP Prevention can be seen from the following expressions:

'' .... a guide to cuff pressure as well but there is no courage yet, because it is risky to re-intubate ... ''
(Participant 5)
'.... how is the respiratory care for the nurse so that the patient is safe from pneumonia ...' '(Participant 2)
... '... when the patient has a ventilator attached, what is done as a guide to nursing action so that the patient does not VAP ...' '(Participant 3)

Theme 6: Implementation strategies needed in developing a nurse's independent action protocol for VAP prevention
The implementation strategy needed in developing the nurse's independent action protocol in VAP prevention consists of A) preparation for making protocols, where 1) Conduct a seminar related to VAP prevention, 2) Conduct training on the use of tools. B) the material for the nurse's independent action protocol is needed, wherein 1). Making the clinical signs form VAP, 2) Making guidelines for independent action by nurses, 3) Making a clear flow. C) Preparation of HR, where 1) Adequacy of HR in conducting care, 2) Improvement of nurses' knowledge, 3) Preparation of increasing skills performed by nurses in the prevention of VAP. C) preparation of tools and materials used, where 1) Provision of tools used for VAP prevention, 2) Training of tools used by patients during treatment in VAP prevention.
The implementation strategy needed in developing the nurse's independent action protocol in VAP prevention can be seen from the following expression:

'' .... our knowledge is prepared so that we understand more about prevention, just like if we could trainings, seminars and other things ... '' (Participant 2)

..... '..... the support from the director and also the addition of knowledge should not only be seniors, but also juniors made a clear guide ...' '(Participant 5)

'' ...... tools and materials that must be met ... '' (Participant 3)

3.2 Discussion
The results of the study stated that nurses 'knowledge of VAP in general was lacking which consisted of low knowledge in the concept of VAP, new / junior nurses' knowledge and independent measures of VAP prevention were still minimal, new nurses who did not understand the actions taken in preventing VAP. This is in line with research conducted in Spain also mentions nurses' knowledge of VAP prevention is still lacking (Perez, 2013).
Research conducted in Spain in 2013 showed that nurses' knowledge was still low, with 64% of nurses knowing that washing their hands before performing suctioning and manipulating ventilator circuits and 18.5% of nurses knowing that Cuff Endo Trcheal Tube (ETT) pressure must be maintained and 3.7% of nurses know physiotherapy chest can reduce the risk of VAP as well as oral care to prevent VAP (Perez, 2013).
One factor in this lack of knowledge is the large number of junior nurses with minimal experience. New / junior nurses must get guidance to improve skills (Ivey, 2012). Nurses' knowledge in VAP prevention is influenced by the level of education, experience of nurses and training (Korhan, 2013). However, other opinions

mention the knowledge of nurses in the prevention of VAP is not absolutely caused by factors of education, tenure and training (Rifai, 2016).

Knowledge in implementing VAP prevention will be a barrier to compliance in VAP prevention so efforts should be made to increase knowledge (El Khatib, 2010). VAP prevention training for nurses can increase knowledge and sensitivity in terms of VAP prevention (Ali, 2013).

The provision of quality care provided to patients is very influential in terms of improving the quality of service. This shows the need to provide education and training so as to increase knowledge and compliance in implementing VAP prevention. Shahnavaz's research (2009) shows training and education influence work creativity to improve work quality.

Retrieval of data by FGD process has the advantage that the data generated can be large and it is very good for this research. In addition, researchers also took other data sources, namely by measuring the level of knowledge of nurses and the level of compliance of nurses in implementing VAP prevention measures.

According to Sullivan (2013) the source of the data obtained from the FGD collected with other data will strengthen the data. In this study the results of the Self Report are combined with the FGD result data to obtain richer data.

During conducting research at this stage, the strengths and weaknesses experienced by researchers were obtained. Where the advantages, researchers can interact directly with participants so that the data obtained is more accurate and can provide mutual sharing of this research. The weakness experienced by researchers is that there are some participants who have not been able to give their opinions and there are some participants who cannot attend because of their busy schedule.

IV.   Conclusion

Based on the analysis results obtained by six themes that reveal nurses 'perceptions about nurses' independent actions in VAP prevention in the ICU room of Mitra Medika General Hospital, Medan, namely 1) Nurses 'knowledge about VAPs in general is still lacking, 2) There are obstacles to the implementation of nurses' independent actions in VAP prevention 3) The lack of experience of nurses in taking independent measures for VAP prevention, 4) The importance of making protocols for independent measures for nurses in VAP prevention, 5) The nurse's independent actions for nurses needed in VAP prevention, 6) Implementation strategies needed in developing independent actions for nurses in VAP prevention.

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