FACTORS THOSE ARE RELATED TO THE INCIDENCE OF NEEDLE STICKS ON INPATIENT NURSES AT DR. SITANALA KOTA TANGERANG HOSPITAL

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ABSTRACT
Avoiding needles for a hospital nurse is very important because even the most minor treatment can pose a risk to the nurse. Use of personal protective equipment, age, years of service, knowledge of occupational health and safety, and training are related to needle sticking for hospital nurses. This research aims to analyze the relationship between the use of personal protective equipment, age, years of service, knowledge and training with the incidence of needle sticking for hospital nurses. This type of research is observational with a cross-sectional study approach. The sample in this study was 47 people. Primary data collection using a questionnaire. Data analysis uses univariate statistics to describe the characteristics of respondents, and bivariate statistics use the Chi-Square test to analyze the relationship between variables. The study shows that there is a significant relationship between the use of Personal Protective Equipment, knowledge and training with the needle sticking in nurses at Dr. Sitanala Kota Tangerang Hospital, with the results of the analysis of Personal Protective Equipment (p = 0.043), knowledge (p = 0.035) and training (p = 0.024). There is no significant relationship between age and years of service with the needle sticking in nurses at Dr. Sitanala Kota Tangerang Hospital, with the analysis of age (p = 0.183) and years of service (p = 0.103). From the results of this study, it was suggested that it was necessary to increase knowledge and training for nurses and improve compliance in preventing needle sticks, both "out of a job" and "on the job" training at least every six months. In addition, it is recommended to carry out regular socialization through leaflets or banners posted in every room about the importance of using good and standard Personal Protective Equipment (PPE) in their duties.

Keywords: Incidence of Needle Sticking, Personal Protective Equipment, Age, Years of Service, Knowledge, Training.

INTRODUCTION
Occupational Health and Safety (OHS) in the current era of scientific and technological progress is necessary and essential to be applied to an institution. The results of the National Safety Council (NSC) report in Injury Facts 2015 Edition show that non-fatal work accidents in hospitals are 20% greater than in workers in other industries. Cases often occur in needle sticks, sprains, back pain, scratches/cuts, burns, infectious diseases, and so on (National Safety Council, 2015).

Needle Stick Injury (NSI) is an accident caused by a needle stick contaminated with blood or body fluids (Shen et al., 2005). Accidents often occur in health services when needle stick wounds inject into patients (Ernawati et al., 2016).

According to the World Health Organization, in the 2002 World Health Report, 2 million out of 35 million health care workers experience exposure to infectious diseases each year. It notes that exposure to communicable diseases in health care workers was 37.6% for Hepatitis B, 39% for Hepatitis
C, and 4.4% for HIV/AIDS worldwide caused by Needle Stick Injury (NSI) (World Health Organization, 2002).

According to Manzoor (2010), a needle stick injury is a severe problem for health workers and a work safety problem that health workers, in general, must face. Globally, more than 35 million health workers worldwide risk experiencing sharp object injuries from needles and other sharp medical objects contaminated with dangerous pathogens every year.

In Indonesia, the Decree of the Minister of Health Number: 1087 / MENKES / SK / VIII / 2010 states that the proportion of needle stick injuries reaches 38-73% of the total health workers. The main problem today is needle exposure procedures that often neglect an incident. The Guidelines for Prevention of Infection Control in Hospitals and other Health Care Facilities concerning the Protection of Healthcare Workers state that officers or people exposed to exposure must receive further treatment to prevent or treat the risk of transmitting infection from patients within 4 hours after exposure. (Peraturan Menteri Ketenagakerjaan Republik Indonesia No. 44, 2015)

According to Boediono (2009), the factors that cause needle sticks, namely: human factors (age, gender, years of service, use of PPE, education level, behavior, training, OHS regulations), environmental factors (noise, air temperature, lighting, slippery floor) and equipment factors (machine condition, availability of machine safety devices, and machine location).

According to research by Sarastuti et al. (2016), Ermawati & Carolus (2016), Wardanang (2015), and Wijayanti (2008), factors that have a relationship with the incidence of needle sticks, can be seen by the variables of age, years of service, knowledge, and training have a relationship with the incidence of needle sticks on health workers, especially nurses in health care facilities such as hospitals. This can have an effect that most health workers, especially nurses, suffer injuries or stab wounds in work accidents, professional occupational health, and safety problems as a result of their work and cause occupational diseases such as losing work time and working days, being unable to work and limited work time.

DR Sitanala Hospital Tangerang City is a type A hospital in Tangerang City. This hospital consists of an inpatient room, an operating room, an Intensive Care Unit room, an Emergency room, and a polyclinic room with 210 nurses. Based on the results of a preliminary study conducted at the K3RS Unit of DR Sitanala Hospital, Tangerang City, in 2017, there were 5 cases in nurses; in 2018, there were 6 cases, and in 2019 there were 7 cases of the needle sticks reported in September 2019. Of the 18 cases, one of these cases was punctured by a needle that a patient with hepatitis B used, and 1 of them was punctured by a needle that an HIV/AIDS patient had used, so one of the ways taken by the hospital to save the nurse was continuous prophylaxis. The target in reducing the incidence of needle sticks is to reach 80%.
METHOD

This study uses an analytical research design to see the relationship between the independent and dependent variables with quantitative methods and with a cross-sectional design. The conceptual framework of the research variables consisted of the incidence of needle sticks in nurses in the inpatient ward of DR Sitanala Hospital, Tangerang City, as the dependent variable, and the use of Personal Protective Equipment (PPE), age, years of service, knowledge, and training participation as independent variables. The population in this study was 100 nurses. The sample in this study is part of the population using the different proportion hypothesis test formula (Lemeshow, 2003). The total population is 100, so 42 respondents are taken as samples plus 10% to anticipate missing answers so that it becomes 47. The sampling method uses a simple random sampling technique. The analysis was carried out univariate and bivariate with Chi-square statistical test. The significance test was performed using the significance limit (p-value <0.05) and 95% confidence interval.

RESULTS AND DISCUSSION

Table 1. shows that more respondents have experienced needle sticks than nurses who have never experienced needles, which are 31 people (66%). This shows that nurses have a risk of experiencing needle stick incidents.

In the variable of using Personal Protective Equipment, it was found that 28 respondents (59.6%) had used suitable Personal Protective Equipment among a total of 47 respondents.

Based on table 1, most of the nurses in the inpatient room were included in the late adult age category, namely 31 people (66%). So the age of late adulthood is more than that of the early majority at Dr. Hospital. Sitanala Tangerang.

Based on table 1, the frequency of tenure is mainly found in nurses with long tenure categories, namely as many as 36 nurses with long terms of 3 years.

Based on knowledge of Occupational Health and Safety (OHS), the highest proportion is in nurses who have good knowledge of 30 people (73.8%). It means that the nurses who already have good knowledge are more than those who have less expertise or as many as 17 people.

Finally, based on participation in training, the highest proportion was nurses who had participated in the training, as many as 26 people (55.3%), with the lowest proportion being nurses who had never attended training, as many as 21 people (44.7).

Table 1. Distribution of the frequency of needle sticks, use of PPE, age, years of service, knowledge, and participation in training for inpatient nurses at Dr. Hospital. Sitanala Tangerang City (n= 47)

<table>
<thead>
<tr>
<th>Number</th>
<th>Variable</th>
<th>Category</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Needle Stick Injuries</td>
<td>Ever</td>
<td>31</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Never</td>
<td>16</td>
<td>44</td>
</tr>
<tr>
<td>2.</td>
<td>Use Of PPE</td>
<td>Not Good</td>
<td>19</td>
<td>40.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Good</td>
<td>28</td>
<td>59.6</td>
</tr>
</tbody>
</table>
Table 2 shows that the results of the bivariate analysis on the chi-square test were obtained (p-value 0.043 <0.05), which means that there is a relationship between the use of PPE and the incidence of needle sticks in nurses in Dr. Sitanala Tangerang City. The PR value of 95% CI (1.058 – 2.336) means that nurses who use PPE are not good, then the incidence of needle sticks is 1.572 times greater than nurses who are in the category of using PPE properly.

The results of the chi-square test showed (a p-value of 0.182 <0.05), which means that there is no relationship between the age factor and the incidence of needle sticks in nurses in ward "X" Hospital Tangerang City. The PR value of 95% CI (0.396-1.147) means no relationship exists between age and the incidence of needle sticks in Dr. Sitanala Tangerang City nurses. The PR value of 95% CI (0.396 - 1.147) means that nurses in the early adult category experience a needle stick incident 0.674 times greater than nurses in the late adult category.

The chi-square test obtained a p-value of 0.103> 0.05), meaning there is no relationship between years of service and the incidence of needle sticks in nurses in Dr. Sitanala Tangerang City. The PR value of 95% CI (1.117 – 2.175) means that nurses with a new tenure experience a needle stick injury incidence of 1,558 times greater than that of nurses with a long tenure.

Based on the chi-square test (p-value 0.035 <0.05), there is a relationship between knowledge and the incidence of needle sticks in Dr. Sitanala Tangerang City nurses. PR value 95% CI (1,135 – 2,412), meaning that nurses with poor Occupational Health and Safety (OHS) knowledge have a needle stick incidence 1,654 times greater than nurses who fall into the category of having good OHS knowledge.

Based on the Chi-square test results (P-value 0.024 <0.05), there is a relationship between participation in training and the incidence of needle sticks in nurses in Dr. Sitanala Tangerang City. PR value 95% CI (1.124 – 2.615) means that nurses who have never participated in the training experience a needle stick injury 1.714 times greater than nurses who have participated.
The results of data analysis using the chi-square test concluded that there is a relationship between the use of Personal Protective Equipment (PPE) and the incidence of needle sticks in Dr. Sitanala Tangerang City. The PR value of 95% CI (1.058 – 2.336) means that nurses who use PPE are not good, then the incidence of needle sticks is 1.572 times greater than nurses who are in the category of using PPE properly. Based on the results of this study, a relationship between the use of PPE and the incidence of needle sticks was also found in Hutama's research (2019) which showed a relationship between the use of PPE and behavior towards the incidence of needle sticks.

The results of data analysis using the chi-square test concluded that there is a relationship between knowledge and the incidence of needle sticks in Dr. Sitanala Tangerang City. The PR value of 95% CI (1.135 – 2.412) means that nurses with poor knowledge have a 1,654 times greater incidence of needle sticks. This is in line with Prakasiwi's (2014) research that there is a significant relationship between knowledge and the occurrence of Needle Stick Injury. Somebody also found an association between knowledge about occupational health and safety and the incidence of needle stick injury based on the result of this study in Wijayanti’s research (2017). It was also found in research conducted by Puspitasari (2018), which showed a relationship between knowledge and work accidents that needles or objects have pierced. Another sharp. This study's results align with research conducted by Kadi (2016), which states a significant relationship between knowledge and the incidence of NSI.

The results of data analysis using the chi-square test show a relationship between participation in training and the incidence of needle sticks in nurses in Dr. Sitanala Tangerang City. The PR value of 95% CI (1.124 – 2.615) means that nurses who fall into the category of never participating in training have a 1.714 times greater incidence of having a needle stick. Somebody also found a relationship between the participant and the incidence of needle stick injury based on the result of this study in Ginanjar's research (2018). It was also found in a study by Syilvia Puspitasari (2018), which showed a relationship between training and work accidents involving needles or other sharp objects at Leuwiliang Hospital, Bogor Regency (2018).
CONCLUSION AND SUGGESTIONS

Based on the results of the study, it can be seen that the factors related to the incidence of needle sticks in nurses in the inpatient room of Dr. Hospital. In Sitanala Tangerang City, the proportion of nurses who have experienced needle sticks in inpatient rooms is greater than nurses who have never experienced needles

Based on the study's results, there were several factors related to the incidence of needle sticks, namely the use of personal protective equipment, nurses' knowledge regarding the incidence of needle sticks, and training participation by nurses.

Factors not related to the incidence of needle sticks include age and years of service of nurses.

Efforts are needed to increase knowledge and training for nurses and improve compliance in preventing needle stick incidents, both "out of a job" and "on the job" training at least every 6 months. In addition, it is recommended to conduct regular socialization through leaflets or banners posted in every room about the importance of using good and standard PPE in carrying out their duties.

In addition, the nurses were needed to oblige those who have never participated in training to participate in an activity that follows the nursing profession to increase knowledge, understanding, and skills in health services following health standards for patients and medical workers.

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REFERENCES


