Factors Affecting the Incidences of Needle Stick Injury on The Nurses Emergency Department of Hospital East Java

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Abstract

Hospital with all the facilities and equipment that can be a source of health and safety hazards of potential, especially for health workers if no management following the standards of safety and health procedure kerjaNeedle stick and sharp object injuries is a significant challenge for health workers, and nurses are jobs are most often associated with the incidence of needle stick injury. The purpose of this study was to determine the factors that influence the prevalence of needle stick injury to nurses in the emergency department of hospital Eas Java. This study using 64 samples from a total of as many as 76. The ER nurse that most of the variables age category ≥ 29 years, ≥ five years of working life, has never participated in occupational safety and health training, and education level diploma 3 — workers who perform unsafe actions as much as 37.5%. The Bivariable analysis showed that age, work periode, education level, and training has a significant value above 0.05 was no meaningful relationship to the needle stick injury. Unsafe action was a value of 0.026, which means significance was a substantial relationship with a needle stick injury. The multivariable nurses who perform dangerous activities are at increased risk of needle stick injury 4x compared to nurses who work safely. Prevention of occupational accidents to human factors include labor regulations taking into account the limits of the abilities and skills of workers, nullify the things that reduce the concentration of workers, enforce work discipline, avoid actions that bring accidents and eliminate their physical and mental incompatibility.

Keyword- *Nurses, Needle Stick Injury, Emergency Department*

Introduction

Hospital with all the facilities and equipment that can be a source of health and safety hazards of potential, especially for health personnel, if it is not done according to the standard management of occupational health and safety procedures[1]. As is well known, hospital activity is closely associated with the use of equipment or sharp objects as a means of support. Nurses play a full part in a 24 hours service on the side of the patient. Therefore, nurses have the highest intensity to interact with patients when compared to others[2].

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According to the Center for Disease Control and Prevention (CDC) estimates that each year 385,000 incidences of stab wounds as a result of syringes and sharps to health care in American hospitals. Health workers at risk of occupational exposure to blood and body fluids of infected (bloodborne pathogens) can lead to infection with HBV (hepatitis B virus), HCV (Hepatitis C Virus) and HIV (Human Immunodeficiency Virus) that one of them through a stab wound syringe known as Needlestick Injury (NSI)[3]. A total of 66.1% of nurses in public hospitals Sarajevo Bosnia experienced something stick injury needle[4].

Needlestick and sharp object injuries are a significant challenge for health workers, and nurses are the most frequent jobs associated with the incidence of needlestick injury[5]. Implementation of the continuing education program showed that training could improve the awareness of nurses in Indonesia and can reduce needlestick injury[6]. Behavioral prevention of needle

stick injury incidence is related to age, education, employment, knowledge, and training[7]. This training can be used as a program to reduce or prevent the occurrence of an accidental needle stick[8]. For that reason, this study aims to was to determine the factors that influence the incidence of needle stick injury to nurses in the emergency department of a hospital X Tulungagung.

Materials and Method

This study uses observational study design, with design crossectional was an observational study design. This research was conducted in the ED Hospital "X" Tulungagung. The population in this study were all nurses in the emergency department (ED) Hospital X Tulungagung with a total of 76 nurses and a sample of 64 nurses. Data obtained from observation and interview. The variables were divided into two dependent (needle stick injury) and independent (age, years of services. Education level, training, and unsafe action). The age factor was divided into two categories: <29 years and ≥ 29 years, a working period divided <5 years and ≥ five years, training was divided already training and not exercise, education divided bachelor and diploma, unsafe action is divided yes and no hazardous. The data analysis used was descriptive, relationship analysis by chi-square test, and influence analysis by logistic regression test.

Results

Results obtained from interviews and observations. Interviews to collect information on age, length of employment, training, and education. The representations were made to get unsafe data action. Rate dangerous activity judged by indirect discard disposable needles into safety box, do recapping, not uses gloves, not to wash your hands before and aftercare to patients. The research results are as follows:

Table 1 Distribution of variable frequency

Variables	Category	Frequency	Percentage (%)
Age	< 29 age	25	39,06
	≥ 29 age	39	60,94
Work Periods	< 5 age	28	43,75
	≥ 5 age	36	56,25
Training	Never	44	68,8
	Ever	20	38,2
Level Education	D3	40	62,5
	S1	24	37,5
Unsafe Action	Yes	24	37,5
	No	40	62,5

Table 1 shows that most of the variables age category ≥ 29 years, ≥ five years of working life, has never participated in occupational safety and health training, and education level diploma 3. Workers who perform unsafe actions as much as 37.5%

Table 2 Distribution of needle stick injury frequency

Variable	Category	Frequency	Percentage (%)
NSI	Ever	20	31,3
	Never	44	68,7
Total		64	100

Table 2 shows that large Legian respondents had never experienced a needle stick injury in the amount of 68.8% and who have had needle stick injury was 31.3%.

Table 3 Relationship between variables with *Needle Stick Injury*

Variables	Needle Stick Injury				Total		PR	Sig.
	Yes		No					
	n	%	n	%	n	%		
Age								
< 29 years	10	40,0	15	60,0	25	100,0	1,560	0,351
≥ 29 years	10	25,6	29	74,4	39	100,0		
Work Periods								
< 5 years	9	32,1	19	67,9	28	100,0	1,052	1,000
≥ 5 years	11	30,6	25	69,4	36	100,0		
Training								
No	12	27,3	32	72,7	44	100,0	0,628	0,467
Yes	8	40,0	12	60,0	20	100,0		
Study								
D3	12	30,0	28	70,0	40	100,0	0,900	1,000
S1	8	33,3	16	66,7	24	100,0		
Unsafe Action								
Yes	12	50,0	12	50,0	24	100,0	1,600	0,026
No	8	20,0	32	80,0	40	100,0		

Table 3 shows the bivariable analysis showed that the variables of age, years of training, and education are not significantly associated with the incidence of needle stick injury with a significant value above 0.05. Variable unsafe action had no meaningful relationship with the prevalence of needle stick injury with a significance value of 0.026.

Table 4 The results of Logistic Regression

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1a	Unsafe_Action(1)	1.386	.568	5.951	1	.015	4.000
	Constant	-1.386	.395	12.300	1	.000	.250
a. Variable(s) entered on step 1: Unsafe_Action.							

Table 4 shows the multivariable analysis showed that the unsafe action influences the incidence of needle stick injury. Nurses who perform dangerous activities are at increased risk of needle stick injury 4x compared to nurses who work safely.

Discussion And Conclusion

The incidence of needle stick injury is one of the occupational accident's occurrences mild but can cause a moderately severe impact. The results of this study showed as much as 31.3% of respondents had experienced these events. Needlestick injury can be prevented, among others, by administrative control[9]. The application of this control can be made by giving some rules or policies such as the creation of SOPs, and if there have as been an exposure attempts to do is to minimize the impact.

The results of the analysis bivariable between age and incidence of needle stick injury is not a significant relationship between age and the prevalence of needle stick injury. International Labor Organization (ILO) states that the issue of age and years of service is a crucial cause of the accident problem, but it must be remembered that the high age does not necessarily have a long service life as well. The results of the analysis

bivariable between working period with the incidence of needle stick injury showed no significant correlation between working period with the frequency of needle stick injury. These results are in line with the results of studies that there is no meaningful relationship between the length of employment with stab wounds incident syringe[10]. Work experience is not an indication that is linked to workplace accidents[11]. This result is different from the standard AS / NZS 4360 that risk control is generically carried out with the approach one of them by providing training to workers on how to work safely, safety culture and safety procedures[12]. Education is not a significant relationship with the incidence of needle stick injury. This result differs from the opinion stating the level of knowledge related to how quickly a person in making decisions. If a worker education levels low so often late or hesitant in making decisions that could lead to accidents[13].

The results showed that there were a significant relationship and the influence of variables unsafe act on the incidence of needle stick injury. The theory of the swiss cheese model describes the accident that the accident with the leading causes of accidents was caused by human error (human error). Accidents that arise within a specific time will be able to accumulate, which can then be combined into an active failure or consist of unsafe actions that ultimately lead to accidents. The principles to prevent workplace accidents are actually very simple, namely, to eliminate the causes of the so-called dangerous acts and unsafe Events[14].

Based on the discussion, it can be concluded that nurses who work with unsafe action can increase the

risk of needle stick injury by 4x compared to nurses who work safely[15]. Prevention workplace accidents to human factors include labor regulations taking into account the limits of the abilities and skills of workers, nullify the things that reduce the concentration workers, enforce work discipline, avoid actions that bring accidents, and eliminate their physical and mental incompatibility[16].

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