http://ejournal.seaninstitute.or.id/index.php/Ekonomi

JURNAL EKONOMI

Jurnal Ekonomi, Volume 11, No 03. 2022 ISSN: 2301-6280 (print) ISSN: 2721-9879 (online)

AN ANALYSIS SAFETY AND HEALTH RISK WORK ON INSTALLATION HEALTH OFFICERS EMERGENCY IN HOSPITAL LEVEL IV. 01.07.02 BINJAI

Nurul Mutiah[1], Ermi Girsang[2], [3]Sri Lestari Ramadhani Nasution
[1,2,3]University Prima Indonesia Medan

ARTICLEINFO

Keywords:
Health, occupational safety, AS/NZS 4360:2004, And Health care workers.

ABSTRACT

K3RS are all activities to guarantee and protect the safety and health of hospital human resources, patients, patient companions, visitors, and the hospital environment through efforts to prevent work accidents and occupational diseases. In carrying out their duties, nurses experience health and safety problems. This study aims to analyze the health and safety risks of health workers in the emergency department (IGD) at the Kindergarten Hospital. IV. 01.07.02 Binjai and seek appropriate risk control for nurses to avoid work accidents and occupational diseases. The risk level assessment refers to the "William Fine" formula and table. It was concluded that the greatest level of hazard was obtained by stitching the wound with the risk of needle sticks, contracting HIV/AIDS, and cleaning the wound. Hospitals are advised to carry out further control efforts by the K3 control hierarchy.

E-mail: -

1. INTRODUCTION

Hospital Occupational Health and Safety, hereinafter abbreviated as K3RS, are all activities to ensure and protect the safety and health of hospital human resources, patients, patient companions, visitors, and the hospital environment through efforts to prevent work accidents and occupational diseases. The implementation of the Occupational Health and Safety (SMK3) management system in hospitals and other medical facilities is part of the overall hospital management to control risks related to hospital work process activities and to create a safe, healthy, and safe hospital environment. free from work accidents and occupational diseases for hospital resources, patient companions, visitors, and the hospital environment. Work accidents also cause material losses for workers and government agencies, and can disrupt the work productivity of hospital employees. (Ministry of Health, 2016).

The results of research in several countries prove that the hospital is one the most dangerous workplaces and nurses are one of the health workers who are at risk for experiencing health and safety problems as a result of their work. As an illustration, the Bureau of Employment Statistics and the National Insurance Council of America (2013) concluded that for every 100 working hours in hospitals in America there are 6.8 incidents of work accidents and occupational diseases (PAK). This figure places occupational accidents and PAK in hospitals slightly higher than occupational accidents and PAK in other sectors, such as the construction, manufacturing, and other professional and business services sectors.

Research by Honda et al (2014) in a study in Thailand, there is a significant relationship between nurses' attitudes towards preventing injuries/accidents caused by sharp objects and the occurrence of injuries due to sharp objects. Nurses who have a negative attitude towards the prevention of sharps injuries are almost twice as likely to be exposed to sharps injuries as those who have a positive attitude. Hospitals can reduce the number of incidents of being stabbed by sharp objects by increasing the attitude of nurses where attitudes are closely related to behavior (Honda et al, 2014).

Jurnal Ekonomi, Volume 11, No 03. 2022 ISSN: 2301-6280 (print) ISSN: 2721-9879 (online)

According to Nurmansyah et al (2014), the demand for hospital services including in the emergency room continues to increase, this is due to an increase in various types of infectious diseases, acute degenerative diseases, traffic accidents, work accidents, disasters, and other events (Nurmansyah, 2014).

Research conducted by Maria et al (2015) found that the majority (54.5%) of respondents committed unsafe acts and most (54.5%) of respondents had experienced workplace accidents. Most types (23.2%) of unsafe actions that are often carried out are operating equipment that does not meet standards. Most types (30.3%) of work accidents are MDS due to the wrong position while working. This is due to the attitude of nurses who are not disciplined.

Research by Sembiring (2018) conducted at the Kabanjahe Regional General Hospital, Karo Regency, North Sumatra, the results of the study were 27 criteria (62.8.8%) of the 43 existing criteria had been met because the K3RS team itself was still working in multiple positions which resulted in K3RS team is not focused perform their duties in the field of K3 and do not have special education regarding K3 (Sembiring, 2018).

The results of a preliminary survey conducted at the hospital. Kindergarten IV 01.07.02 Binjai researchers interviewed 4 nurses in the emergency room, it was found that nurses reporting data on needle stick incidents in 2018 had increased from 2017. In 2017, there were 6 officers who reported needle stick incidents, in 2018 this increased to 8 people.

2. METHOD

2.1. Hospital

Hospital is a health service institution that provides complete individual health services that provide inpatient, outpatient, and emergency care services. Plenary health services in question are health services that include promotive, preventive, curative and rehabilitative. The service of individual health tasks in a plenary manner, basically, the hospital has the function of organizing medical treatment and health recovery services in accordance with hospital service standards (Government of the Republic of Indonesia, 2009).

The division of hospitals based on the type of service provided, hospitals are categorized into general hospitals and special hospitals. General Hospital is a hospital that provides health services in all fields and types of disease. Special Hospital is a hospital that provides primary services in a particular field or type of disease based on scientific disciplines, age groups, organs, types of diseases or other specificities (Kemenkes, 2014).

2.2. Hospital Obligations and Rights

Based on Law no. 44 of 2009 article 29, hospital obligations between other :

a. Provide correct information about hospital services to the public;
b. Provide safe, quality, anti-discriminatory, and effective health services by prioritizing the interests of patients in accordance with hospital service standards;
c. Provide emergency services to patients in accordance with their service capabilities;
d. Take an active role in providing health services in disasters, in accordance with their service capabilities;
e. Provide facilities and services for the underprivileged or poor;
f. Carry out social functions, among others, by providing service facilities for underprivileged/poor patients, emergency services without a down payment, free ambulances, services for victims of disasters and extraordinary events, or social services for humanitarian missions;
g. Create, implement, and maintain quality standards of health services in hospitals as a reference in serving patients;
h. Organizing medical records;

Jurnal Ekonomi, Volume 11, No 03. 2022 ISSN: 2301-6280 (print) ISSN: 2721-9879 (online)

i. Provide proper public facilities and infrastructure, including worship facilities, parking, waiting rooms, facilities for disabled people, breastfeeding women, children, the elderly;
j. Refusing the patient's wishes that are contrary to professional and ethical standards as well as statutory regulations;
k. Provide true, clear and honest information regarding the rights and obligations of patients;
l. Have an accident prevention and disaster management system;
m. Implement government programs in the health sector both regionally and nationally;
n. Make a list of medical personnel who practice medicine or dentistry and other health workers;

2.3. Emergency Departments

Emergency Room is one of the service units in a hospital that provides initial treatment (for patients who come directly to the hospital) or follow-up (for patients who are referred from other health care facilities or from PSC 119), suffering from illness or injury that can threaten their survival (Ministry of Health, 2018).

The emergency department functions to receive, stabilize and manage patients who need immediate emergency treatment, both in daily conditions and in disasters. Broadly speaking, the activities in the Hospital Emergency Room and the IGD's responsibility in general consist of:

a. Organizing Emergency Services with the aim of dealing with acute conditions or saving the life and/or disability of the patient.
b. Receiving referral patients who require further/definitive treatment from other health care facilities.
c. Refers to emergency cases if the hospital is not able to provide advanced/definitive services (Kemenkes, 2018).

2.4. Work accident

Work safety is related to work accidents, namely accidents that occur in the workplace. The definition of accident is disability and death as a result of work accidents. work-related accidents. working relationship with the company. The employment relationship here can mean that the accident occurred due to work or at the time of carrying out work. So in this case the accident is a direct result of the work or the accident occurs when the work is being carried out (Suma'mur, 2009).

The occurrence of work accidents is caused by human factors and physical factors. Human factors that do not meet safety include carelessness, carelessness, drowsiness, and fatigue, while unsafe environmental conditions include slippery floors, poor lighting, glare, and open machines (Notoatmodjo, 2007). Work accidents not only cause loss of life and material losses for workers and employers, but can also disrupt the overall production process, damage the environment which in turn will have an impact on the wider community (Government of the Republic of Indonesia No. 1087 of 2010).

The occurrence of work accidents is caused by human factors and physical factors. Human factors that do not meet safety include carelessness, carelessness, drowsiness, and fatigue, while unsafe environmental conditions include slippery floors, poor lighting, glare, and open machines (Notoatmodjo, 2007).

Work accidents not only cause loss of life and material losses for workers and employers, but can also disrupt the overall production process, damage the environment which in turn will have an impact on the wider community (Government of the Republic of Indonesia No. 1087 of 2010).

This study uses a mix-method. Identification of hazards and risks used the Job Hazard Analysis (JHA) method where identification is carried out at each stage of the work. while risk assessment is determined by multiplying the consequences, exposure and likelihood factors. This

Jurnal Ekonomi, Volume 11, No 03. 2022 ISSN: 2301-6280 (print) ISSN: 2721-9879 (online)

study aims to analyze the risks of occupational safety and health on health workers in the emergency department of the Kindergarten Hospital. IV. 01.07.02 Binjai.

The population is "a generalization area consisting of objects/subjects that have certain qualities and characteristics determined by researchers to be studied and then drawn conclusions" (Sugiyono, 2010). In this study, the population was nurses who worked in the emergency department of the Kindergarten Hospital. IV. 01.07.02 Binjai. Which amounts to 14 people.

The sample in this study were nurses who worked in the emergency department of the Kindergarten Hospital. IV. 01.07.02 Binjai, totaling 14 people with a total sampling. This research was conducted in the emergency department of the Kindergarten Hospital. IV. 01.07.02 Binjai

The research was carried out starting with submitting titles, surveying research sites, preparing proposals, consulting proposals, proposals and research seminars, carried out in August 2019.

Data was collected using a semi-quantitative method that refers to the Australian/New Zealand (AS/NZS 4360:2004) standard on risk management. The data were analyzed using the AS/NZS 4360:2004 standard from Fine's table to see how large the level of frequency, consequence, and exposure was.

3. RESULT AND DISCUSSION

4.1. Description of Research Site

This research conducted inTk IV Hospital 01.07.02 Binjai is one of the a class C hospital that has been registered with the Ministry of Health since 06/01/2014. Tk IV Hospital 01.07.02 Binjai is an RSU type hospital owned by the Indonesian Army in Binjai City. Tk IV Hospital 01.07.02 is located at Jl. Bandung No. 4 Binjai.

Below are the characteristics of respondents at Tk IV Hospital 01.07.02 Binjai are as follows:

Table 1. Characteristics of Respondents at Tk IV Hospital 01.07.02 Binjai

Variable	Frequency	Percentage
Age		
21-30	4	28%
31-40	8	57%
41-50	2	15%
Gender		
Man	6	42%
Woman	9	58%
Length of working		
1-5 years	4	29%
5-10 years	7	50%
>10 years	3	21%

Based on table 1 interviews were conducted on 14 respondents, some of the respondents were aged between 31-40 years as many as 8 people (57%), aged 21-30 years as many as 4 people

Jurnal Ekonomi, Volume 11, No 03. 2022 ISSN: 2301-6280 (print) ISSN: 2721-9879 (online)

(28%) and those aged 41-50 years as many as 2 people (15%). Based on gender, the most respondents were women as many as 9 people (58%) and the least were men as many as 6 people (42%). Based on the length of work, most respondents worked for 5-10 years as many as 7 people (50%), >10 as many as 3 people (21%) and worked for 1-5 years as many as 4 people (29%).

4.2. Result of Hazard Identification in ER Tk IV Hospital 01.07.02 Binjai

Based on the results of observations in the ER Tk IV Hospital 01.07.02 Binjai, the following hazard identification was obtained:

Table 2. Results of Hazard Identification in ER Tk IV Hospital 01.07.02 Binjai

No.	Action	Potential hazard	Existing controls
1	Installing infusion	Infusion needle (Abocath) Exposure to patient's blood Low bed Broken bed control Nurses don't wear PPE	SOP for infusion PPE: Masks and Gloves hand chair use Seat
2	Suturing	Scissor, anesthetic drugs, Sewing needle, Static action table (no can be controlled), Using hands to hold the edges of the wound	Wound sewing SOP PPE: Masks and Gloves hand chair use Seat
3	Take blood sample	Syringe, low bed, Nurses don't wear PPE	PPE: Masks and Gloves Hand
4	Lifting and move patient	low bed, Lifting time position awkward	Ask the staff for help Portier
5	To do Suctioning	patient body fluids droplet from patient, position work	SOP suction, PPE: Masks and Gloves Hand
6	Installing the Catheter	Patient body fluids, urine patient	SOP for installing chateter, PPE : Gloves
	To do		

Jurnal Ekonomi, Volume 11, No 03. 2022 ISSN: 2301-6280 (print) ISSN: 2721-9879 (online)

7	cardiac resuscitation lungs	heart lung Work fast and repetitive No action place have a resuscitation mat work position bent over, The patient's family is in indoor	Basic life support SOP (BHD) PPE : Gloves
8	Giving medicine Injection	Syringe, exposed blood, not wearing PPE	SOP Action PPE : Gloves
9	Treating Wounds	Patient blood, table low action	SOP for wound care PPE: Gloves, Apron
10	Giving injection	Using a syringe, not wearing PPE	SOUP injection PPE : Gloves
11	Giving medicine via rectal	Feces	Action SOPs PPE : Gloves
12	Slippery floor	Injury	Action SOP

Based on table 4.2, it was found that there were several potential hazards based on each medical action, one of which was the act of installing an infusion, possible dangers of infusion needles (Abocath), exposure to patient blood, low bed, damaged bed control, nurses not wearing PPE. Then when suturing the wound, the table is static (uncontrollable) and uses hands to hold the wound edge. There are also nurses who don't Use PPE when taking blood samples. When moving the patient the position feels awkward.

After identifying the danger in the ER Tk IV Hospital 01.07.02 Binjai then analyzing the risks in the nurse's actions. Risk analysis is identified through identification of various types of actions performed by nurses, then the Consequences (C), Exposure (E), and Probability values of each risk are determined and all three are multiplied to obtain the Risk Value (NR), then the results are compared with the risk table from "William Fine" and the results obtained are the basic risk, namely the risk regardless of the existing controls. Furthermore, risk evaluation is carried out by recalculating the Consequences (C), Exposure (E), and Probability values of each risk after looking at the controls that have been carried out. The value obtained from this calculation is called the existing level.

Table 3. Risk Analysis and Risk Evaluation on the Actions of Nurses in the Emergency Room at Tk IV Hospital 01.07.02 Binjai

Work & Risk	Basic risk	Control	Existing risk	Level risk	RR
Infusion Installation					
Stab wound	500	gloves	180	Big	64%
Contact with blood patient	500	gloves	180	Big	64%
Bending position	300	sit on the chair	90	Big	40%

Jurnal Ekonomi, Volume 11, No 03. 2022 ISSN: 2301-6280 (print) ISSN: 2721-9879 (online)

Suturing					
Needled and hecing scratched ampoule wound	450	gloves	270	Big	50%
Contact with blood patient, infected with HIV AIDS	450	gloves	180	Big	60%
low back pain, painful muscle	180	sit on the chair	90	Priority 1	50%
Patient mobilization				Priority	
Awkward posture	180	Portier power	90	1	50%
Take sample blood					
Needle prick	450	gloves	180	big	60%
Installing Dower Chatter					
Exposure to body fluids patient	180	provision PPE	45	Priority 1	50%
Installing Naso Gastric Tube					
Exposure to body fluids patient, Exposure to germs from patient	90	gloves, mask, apron	30	Priority 3	83%
Giving injection					
Needle prick	450	Action SOPs	60	Priority 3	60%
Clean the wound					
Exposure to patient's blood	500	gloves	100	Big	80%
Low back pain, painful muscle	300	sit on the chair	45	Priority 1	80%
Life Support Base					
Awkward posture, LBP, worried	90	Action SOPs	60	Priority 3	33%
Suctioning					
exposed to blood, droplet and body fluids patient	270	Action SOPs gloves	90	Priority 1	60%
Give medicine suppository					
Exposed to feces patient	90	Action SOPs	30	Priority 3	66%
Slippery floor					
result in injury	180	Action SOPs	45	Priority 3	50%

Based on table 3, it can be seen that the highest risk value (NR) obtained by 500 (very high), namely in the infusion in the form of the risk of needle sticks, contact with the patient's blood, and

Jurnal Ekonomi, Volume 11, No 03. 2022 ISSN: 2301-6280 (print) ISSN: 2721-9879 (online)

contracting HIV AIDS. While the lowest value was obtained at 90 (low) on basic life support measures in the form of anxiety.

The act of inserting an infusion has 3 risks, namely stab wounds, contact with the patient's blood, and awkward posture (bent). The basic risk value for stab wounds and exposure to blood is 500 (very high), while the risk for awkward posture (slouching) is 180. After evaluating the risk by looking at existing controls, the risk value for the existing level of stab wounds and exposure to blood is 180 and awkward posture (slouching) with a risk value of 90.

In the act of sewing the wound, there are three risks, namely needle sticks, ampoule wounds, and contact with the blood of patients infected with HIV/AIDS, Hepatitis. As well as awkward posture (bent). The basic risk value for the risk of needle sticks, ampoule wounds, and contact with the blood of patients infected with HIV/AIDS, Hepatitis is 450 (very high), while bending the risk value is 180 with a priority risk level of 1. carried out, the risk value for needle sticks and ampoule wounds decreased to 270, while contact with the blood of patients infected with HIV/AIDS and hepatitis decreased to 80 (high risk), while bending the risk value decreased to 180 (high risk). there is an action to lift and move the patient only one risk, namely awkward posture with a value of 180 (large),

In the act of taking blood, there are two risks, namely needle sticks and exposure to blood with a value of 500. After evaluation, the risk value for needle sticks becomes 180 and exposure to blood becomes 60 (priority 3). To insert a catheter, the risk of exposure to the patient's body fluids and urine is 500, after a risk evaluation it becomes 45 (priority 3).

The injection has a risk value of 450 (high risk) and the risk value drops to 60 (priority 3) after being compared with existing controls. In the action of cleaning the wound, the risk of exposure to the patient's blood has a risk value of 500 (very high), low back pain and muscle pain 45 (priority 3) and an evaluation is carried out to obtain a risk value of 100 and 45. In the BHD (basic life support) procedure, the risk is is an awkward and anxious posture, the risk values are 90 and 45. After being evaluated and the risk value is recalculated, the risk of this action becomes 60 and 45 (priority 3).

For lender suctioning, the risks are exposure to blood, inhalation of droplets, and exposure to the patient's vomit to have a risk value of 270 (priority 1) and the risk evaluation value is 90. Whereas in the act of administering drugs through the rectal the risk value is 90 and after a risk evaluation is carried out 30 (priority 3).

4. CONCLUSION

The types of nurse actions that are often carried out in the ER are sewing wounds, installing infusions, lifting and moving patients and other actions. The risks associated with infusion and stitching are needle sticks, exposure to patient blood, awkward postures, contracting hepatitis and low back pain. Consequences (C), Exposure (E), Probability (P) values for infusion and wound suturing for physical and biological risks are C:5, E:6, and P:6, (180). The level of risk of infusion and suturing the wound is at a high risk level. The control that has been carried out by hospital management is the provision of PPE in the form of (masks, gloves, shoes, aprons) SOPs for all types of work and hand washing equipment.

REFERENCES

[1.] Adnani, H. (2011). Public Health Science (Pp. 120-124). Yogyakarta: Nuha Medika

[2.] Australian Standard/ New Zealand Standard. 2004. Australian Standard / New Zealand Standard Risk Management 4360:2004. Sydney And Wellington: Author.

[3.] Center For Disease Control And Prevention (CDC). (2012). Hierarchy Of Controls. Retrived From Http://Www.Cdc.Gov/Niosh/Topics/Engcontrols/.

[4.] Cho, E., Lee., H., Choi, M., Park, SH, Yoo, IY, & Aiken, LH (2013). Factors Associated With Needlestick And Sharp Injuries Among Hospital Nurses: A Cross-Sectional Questionnaire Survey. Int J Nurs Stud, 50(8), 1025–1032.

[5.] Colling, Dvid A. 1998. Industrial Safety Management And Technology. United States: Prentices-Hall, Inc.

Jurnal Ekonomi, Volume 11, No 03. 2022 ISSN: 2301-6280 (print) ISSN: 2721-9879 (online)

[6.] Cooper, D., 2007. Behavioral Safety Approaches. USA: CEO Of BSMS Inc. Francelin.
[7.] Cross, Jean Et Al. 2004. OHS Risk Management Handbook. Australia: Standards Australia International Ltd.
[8.] Fine, William T. 1971.*Mathematicalevaluationforcontrollinghazard.*Australia: Central Queensland University. Guideline.
[9.] Gallagher, R., & Sunley, K. (2013). Sharps Safety. RCN Guidance To Support The Implementation Of The Health And Safety. UK: Royal College Of Nursing.
[10.] Harms, Lars And Rigdahl. 2001. *Safety Analysis Principles And Practice In Occupational Safety 2nd editions.*New York: Taylor And Francis.
[11.] Honda, M., Chompikul J,. Rattanapan. (2014). Sharps Injuries Among Nurses In A Thai
[12.] Regional Hospital: Prevalence And Risk Factors. Vol 2 Number 4
[13.] Indrawan And Yaniawati. 2017. Research Methodology (Quantitative, Qualitative And Mixed For Management, Development And Education) – Revised. Bandung: PT Refika Aditama
[14.] International Organization For Standardization. 2008. ISO 31000:2009 Risk Management. Principles And Guidelines Of Implementation.