

The relationship between health behavior and occupational accidents to nurses in the emergency unit in an Indonesian Naval Hospital

Siti Saerah¹, Djazuly Chalidyanto^{1*}

¹Department of Health Administration and Policy, Faculty of Public Health, Universitas Airlangga, Surabaya, Indonesia 60115

***Corresponding Author: Djazuly Chalidyanto**

Department of Health Administration and Policy, Faculty of Public Health, Universitas Airlangga, Surabaya, Indonesia 60115

Email: djazulych@fkm.unair.ac.id

Abstract. The preliminary survey showed the number of incidents at occupational accidents to nurses at Dr. Midiyato Suratani Naval Hospital, Indonesia, was high at 82%, and nurses in the Emergency Unit experienced more incidents at 72.2%. This study analyzed the relationship between health behavior (knowledge, attitude, action) and incidents at work in the Emergency Unit of Dr. Midiyato Suratani Naval Hospital. The method used was a descriptive-quantitative study with a cross-sectional design. The samples were nurses in the Emergency Unit of Dr. Midiyato Suratani Naval Hospital. This study used a univariate analysis and bivariate analysis using the Chi-Square test. The results showed that incidents at work in the Emergency Unit of Dr. Midiyato Suratani Naval Hospital were 72.8%. The nurses lacked knowledge (61.1%) and performed false action (66%) but had a good attitude (72.2%). The chi-square test found that there was a significant relationship between knowledge and occupational accidents, so is action and occupational accidents in the Emergency Unit of Dr. Midiyato Suratani Naval Hospital. There is no significant relationship between attitude and occupational accidents in the Emergency Unit of Dr. Midiyato Suratani Naval Hospital. To decrease risks of occupational accidents occurring to nurses, the hospital should design a policy for planning and implementing an occupational safety and health program.

Keywords: Health Behavior, Occupational Accidents, Emergency Unit.

1. Introduction

The definition of accidents due to work is accidents related to work at the company (Sarwono, 1993). Work here means that accidents could occur due to work itself or when carrying out the work. In this case, the accident is a direct result of work or accidents occur when the work is being done. In the terminology used in Indonesia, occupational accidents are accidents that occur at work, including diseases that arise from work. Occupational accidents include when workers have an accident on the way to work or on their way home from work when they pass through the road they take everyday. Even in Indonesia, if a worker suddenly dies at work, it is also considered an occupational accident. For example, when a worker suddenly dies while working, without seeing the cause of the illness, this will be treated as a workplace accident. Or when a worker gets a disease attacks at work, then

directly taken to doctor/health service unit or hospital, but s/he dies no more than 24 hours later, this is also treated as an occupational accident (Matondang et al. 2007).

Preliminary survey results conducted by the researcher indicated that the occurrence of occupational accidents in nurses in Dr. Midiyato Suratani Naval Hospital Tanjung Pinang, Indonesia, was substantial. Out of 143 nurses at the hospital, 118 people (82%) had experienced occupational accidents and 25 people (18%) had not. Of the 118 people, common cases were needle sticking when taking blood/other body fluids as many as 65 people (55%), scratched parts of the body due to contact with ampoules by 28 people (24%), fell at the same height or slipped as many as 11 people (9%), back injuries due to lifting heavy loads by eight people (7%) and other cases (5%) such as falling from the roof, light electrocuted, etc.

From the survey results, it was found that nurses who experienced the most occupational accidents were in the Emergency Unit. From 18 nurses, as many as 13 people (72.2%) had had occupational accidents and only five people (27.8%) had never experienced occupational accidents. The types of occupational accidents that they often encounter such as falling or slipping, back injuries, or sprains on limbs due to lifting heavy loads or pushing patients beyond the limits of ability and puncture of the syringe when taking blood samples/other body fluids. However, they see the incident as usual and had never been reported to the head of the room. The purpose of this study is to determine the relationship between health behavior and the occurrence of occupational accidents in nurses at the Emergency Unit of Dr. Midiyato Suratani Naval Hospital Tanjung Pinang.

2. Material and Methods

This research is a descriptive correlation study using a cross-sectional survey design that is gathering data at a time to analyze the relationship between health behavior and occupational accidents at the Emergency Unit of Dr. Midiyato Suratani Naval Hospital Tanjung Pinang, Indonesia.

2.1 Sampling Design, Research Population, research samples, and variables

The population in this study was all nurses in the Emergency Unit of Dr. Midiyato Suratani Naval Hospital Tanjung Pinang, amounting to 18 people. The sample is a portion of the number and characteristics possessed by the population (Sarwono, 1993).

a. Inclusion Criteria

1) Nurses who work at the Emergency Unit of Dr. Midiyato Suratani Naval Hospital Tanjung Pinang

2) Willing to be a research respondent.

b. Exclusion Criteria

1) Medical and non-medical personnel other than nurses.

2) Not willing to be a respondent, being sick, on leave, or outside service for a long time when the researcher is collecting data.

The sampling method used was the total sampling technique. The independent variable is the variable that is the cause of the emergence or change of the dependent variable. The independent variable in this study was behavior, including knowledge, attitudes, and actions. The dependent variable is the variable that is affected or which is due to the presence of the independent variable. The dependent variable in this study was occupational accidents. Data collection for occupational accidents variables, knowledge, attitudes, was gathered using a questionnaire given to nurses in the Emergency Unit Dr. Midiyato Suratani Naval Hospital

Tanjung Pinang which has been selected and determined as a research sample. Data collection for action variables was carried out by structured observation guided by a questionnaire.

3. Result

Based on table 1, it can be seen that from 18 respondents, 15 people (83.3%) had a diploma education, and ten people (55.6%) had worked for less than five years.

Table 1. Distribution of Respondents Based on Education and Years of Service in the Emergency Unit of Dr. Midiyato Suratani Naval Hospital Tanjung Pinang

Characteristic	Frequency	Percentage
Education		
· Nursing School	2	11,1
· Diploma	15	83,3
· Bachelor	1	5,6
Years of service		
< 5 years	10	55,6
> 5 years	8	44,6

Table 2. Frequency Distribution of Occupational accidents to Nurses in the Emergency Unit of Dr. Midiyato Suratani Naval accidents Tanjung Pinang.

Occupational accidents	Frequency	Percentage
Had experienced	13	72,2
Had never experienced	5	27,8

Based on table 2, as many as 13 people out of 18 respondents (72.2%) in general had occupational accidents at the Emergency Unit of Dr. Midiyato Suratani Naval Hospital Tanjung Pinang.

Table 3. Frequency Distribution of Behaviour to Nurses in the Emergency Unit of Dr. Midiyato Suratani Naval Hospital Tanjung Pinang.

Behavior	Frequency	Percentage
Knowledge		
· Good	7	38,9
· Poor	11	61,1
Attitude		
· Good	13	72,2
· Not good	5	27,8
Action		
· Right	6	33,3
· Wrong	12	66,7

Based on table 3, 11 people out of 18 respondents (61.1%) lacked the knowledge, more respondents behaved well amounting to 13 people (72.2%), and more nurses who acted wrongly were 12 people (66.6%).

Table 4. The Relationship between Knowledge and Occupational accidents in Nurses in the Emergency Unit of Dr. Midiyato Suratani Naval Hospital Tanjung Pinang.

Health Behavior	Occupational accidents				Total		OR	CI 95%	p-Value
	Had never experience		Had experience						
	n	%	n	%	n	%			
Knowledge									
Good	4	57,1	3	42,9	7	100,0	0,075	0,006-	0,047
Poor	1	9,1	10	90,9	11	100,0		0,954	
Attitudes									
Good	5	38,5	8	61,5	13	100,0	1,625	1,057-	0,249
Not good	0	0	5	100,0	5	100,0		2,497	
Action									
Right	4	66,7	2	33,3	6	100,0	0,045	0,003-	0,022
Wrong	1	8,3	11	91,7	12	100,0		0,649	

Bivariate analysis was employed to explain the relationship between two variables, namely between independent variables that include behavior (knowledge, attitudes, actions) with the dependent variable, namely occupational accidents. Analysis of the data used is the Chi-Square test. Based on Table 4, it can be seen that 10 out of 11 respondents who lack knowledge, have had occupational accidents, and 4 out of 7 respondents who have a good experience, have never had occupational accidents.

The results of the statistical test with Chi-Square at 95% Confidence Interval (CI) showed a probability $(p) \leq 0.05$ ($p = 0.047$). This indicates that there was a significant difference between nurses' knowledge and the occurrence of occupational accidents in the Emergency Unit of Dr. Midiyato Suratani Naval Hospital Tanjung Pinang, meaning that the research hypothesis states there is a relationship between knowledge and the occurrence of occupational accidents in nurses in the Emergency Unit of Dr. Midiyato Suratani Naval Hospital Tanjung Pinang. From the results of the analysis also obtained the value of Odds Ratio (OR) = 0.075 with 95% CI: 0.006 - 0.954, meaning that those who are poorly knowledgeable have a risk of 0.075 times having an occupational accident compared to those with excellent knowledge.

Based on Table 4, it can also be seen that 8 out of 13 respondents behaved well and had experienced an occupational accidents, and five respondents behaved unkindly, had had an occupational accidents. The results of statistical tests with Chi-Square at 95% Confidence Interval (CI) showed a probability $(p) > 0.05$ ($p = 0.249$). This shows that there is no significant difference between nurses' attitudes and occupational accidents in the Emergency Unit of Dr. Midiyato Suratani Naval Hospital Tanjung Pinang, meaning that the research hypothesis states there is no relationship between attitude and the occurrence of occupational accidents in nurses in the Emergency Unit of Dr. Midiyato Suratani Tanjung Pinang Naval Hospital.

Based on Table 4, it can be further seen that 11 of 12 respondents who acted wrongly had had occupational accidents, and 4 out of 6 respondents who responded appropriately had never had occupational accidents. The results of statistical tests with Chi-Square at 95% Confidence Interval (CI) showed a probability $(p) \leq 0.05$ ($p = 0.022$), this indicates that there is a relationship between nurses' attitudes and occupational accidents in the Emergency Unit

of Dr. Midiyato Suratani Naval Hospital Tanjung Pinang, meaning the research hypothesis states there is a relationship between knowledge and the occurrence of occupational accidents in nurses in the Emergency Unit of Dr. Midiyato Suratani Naval Hospital Tanjung Pinang.

The results of the analysis also obtained the value of Odds Ratio (OR) = 0.045 with 95% CI: 0.003 - 0.649, meaning that those who commit wrong actions have a risk of 0.045 times having occupational accidents compared to those who take the right moves.

4. Discussion

Based on the results of the study of 18 respondents in the Emergency Unit of Dr. Midiyato Suratani Tanjung Pinang Naval Hospital in 2011, 72.2% of nurses had had occupational accidents. The results of this study are in line with the research of Liza Salawati (2009) that nurses who experienced occupational accidents in the Emergency Room at Banda Aceh Hospital in 2009 were 69.6%. During 2000 at Cipto Mangunkusumo General Hospital, there were nine occupational accidents at risk of HIV exposure among reported health workers (Pulungsih, 2005). The incident happened to 7 nurses, one doctor, and one officer in the Emergency Room. While at Prof. Dr. Sulianti Saroso Hospital in 2001, there was one occupational accident that was exposed to HIV in officers in the Emergency Unit. Theoretically, according to Perdhaki (2000), activities in the Emergency Unit have a risk for accidents originating from physical, chemical, ergonomic, and psychosocial factors. Along with the progress of science and technology, the risk faced by nurses in the Emergency Unit is increasing.

Emergency Services Unit in hospitals is a service that needs to pay special attention to this aspect of Hospital OSH because it has a higher risk and requires exceptional room management, specialized equipment, and proper management of hazardous materials. Therefore, hospital management needs to know in detail various matters related to Hospital OSH to provide the best possible health services. Types of occupational accidents in the Emergency Unit of Dr. Midiyato Suratani Naval Hospital Tanjung Pinang the most are falling or slipping, back injury, or sprained limbs due to lifting heavy loads or pushing patients beyond the limits of the ability and punctured when taking blood samples/other bodily fluids. The most significant cause of accident problems is human factors due to lack of knowledge, lack of skills, lack of awareness of employees to carry out OSH regulations, and many employees who still underestimate or indifferent in meeting work SOP (Pusat Kesehatan Kerja, Keselamatan Kerja di Sarana Kesehatan, 2003).

4.1 Relationship between Knowledge and Occupational accidents

The results of statistical tests with Chi-Square at 95% CI showed that there was a relationship between nurses' knowledge and the occurrence of occupational accidents in the Emergency Unit of Dr. Midiyato Suratani Naval Hospital Tanjung Pinang. Nurses with insufficient knowledge (90.9%) had experienced occupational accidents while a well-informed nurse (57.1%) had never had occupational accidents. Nurses whose level of expertise is still lacking, the occupational accidents are more severe than nurses who are well-informed because nurses who lack knowledge generally do not know the risk of occupational accidents in the Emergency Unit as well as procedures regarding occupational health and safety.

The results of this study are in line with the research of Liza Salawati, which concluded that there is a relationship between nurses' knowledge and the occurrence of occupational accidents. These results indicate a better level of expertise, the lower the number of occupational accidents. Occupational accidents could be prevented and prevention based on knowledge of the causes of occupational accidents that occur (Suma'mur, 1996).

The results of this study are also following the concept put forward by Notoatmodjo(2003), stating that knowledge is a predisposing factor for someone to behave so that better knowledge will stabilize a person to make more stable decisions. Experience is an essential domain for the formation of one's actions. The Emergency Room is generally used for various activities, for example, practicum, research, and testing and/or calibration activities(Hartati, 2006). Because the Emergency Unit involves many people, the risk of occupational hazards in the Emergency Unit can also affect many people, so all those involved in the Emergency Unit must have sufficient knowledge about occupational safety and health in the Emergency Room. The Emergency Unit nurses are expected to continue to increase their understanding of the properties of the materials and the experimental techniques and operation of the equipment as they should. The ability to control the danger of accidents in the Emergency Unit allows nurses to create their atmosphere that is safe and comfortable at work so that they can work and work optimally.

It is also known that nurses who have good knowledge (42.9%) have experienced occupational accidents; this shows that nurses who have good knowledge also have experienced occupational accidents because the nurses did not get a good OSH promotion. After all, there was no Hospital OSH program. Some disagreed, and some act wrong when working. In the preliminary survey, it was also discovered that the nurses at the Emergency Unit of Dr. MidiyatoSurataniTanjung PinangNaval Hospital consider the occupational accidents to be ordinary and does not need to be reported.

According to Hartati (2006), nurses know the rules but do not implement them because they feel less flexible; for example when they use rubber gloves and protective clothing. Work safety issues in the Emergency Unit are given sufficient attention and emphasis in line with the implementation of educational, research, and analysis activities.

It is necessary to continue to provide clear, detailed, and comprehensive information about the dangers in the Emergency Room and to work to create safety in the Emergency Room. Nurses in the Emergency Unit must always study and detect any possible risks arising from accidents in the Emergency Room, must always increase awareness and discipline in obeying regulations to minimize the chances that will occur. Be aware that accidents can have an impact on him and others and their environment.

4.2. Relationship between Attitudes and Occupational accidents

The results of statistical tests with Chi-Square at 95% CI showed that there was no relationship between nurses' attitudes and the occurrence of occupational accidents in the Emergency Unit of Dr. MidiyatoSurataniNaval Hospital Tanjung Pinang. Nurses who behaved well (61.5%) had experienced occupational accidents while nurses who misbehaved, all had experienced occupational accidents(100%). This shows that nurses who behave well have also experienced occupational accidents.

Based on the results of the statistical tests above, there is no significant difference between attitude and occupational accidents, which is likely to be caused by the majority of respondents wanting to display the best results in filling out the questionnaire so that the attitude shown is outstanding but not supported by excellent knowledge and correct actions at work.

The statement supports this that attitude is an evaluative predisposition that largely determines how individuals act, but attitudes and real actions are often very different (Notoatmodjo, 2003).Attitude is a readiness or willingness to act and is not an action or activity. An attitude has not automatically materialized in action to manifest an attitude into a real action needed supporting factors. According to Hartati (2006), some nurses were negligent and deliberately did not obey the rules while working in the Emergency Unit.

Nurses are often reluctant to use PPE. Besides, nurses are unwilling to learn everything related to equipment, material properties, and other matters relating to safety in the Emergency Unit before working. This will be very dangerous and poses a significant risk to security in the Emergency Unit.

Sarwono (1993) states that attitude is a tendency to respond (positively or negatively) to certain people, objects, or situations. A positive or negative attitude depends on the positive or negative aspects of the knowledge component. The more positive aspects of the knowledge component, the more critical the part are, the more positive the attitude is formed—conversely, the more negative aspects of the knowledge component, the more negative the attitude.

According to Annanto (1993), the process of forming attitudes takes place through the process of social learning. It is the process of building a positive attitude because of the social interaction experienced by individuals. According to Notoatmodjo (2003), a person's knowledge will determine attitudes that are manifested in real actions but not always so it can even happen otherwise, negative behavior but positive attitudes and knowledge because situations, experiences, and values also influence attitudes. The formation of attitudes is also influenced by personal experience, culture, other people who are considered essential, the mass media, individual institutions or institutions, and emotional factors in the individual concerned.

4.3. Relationship between Actions and Occupational accidents

The results of statistical tests with Chi-Square at 95% CI showed that there was a relationship between nurses' actions and the occurrence of occupational accidents in the Emergency Unit of Dr. Midiyato Suratani Naval Hospital Tanjung Pinang, nurses who had acted wrongly by 91.7% had experienced occupational accidents. In comparison, nurses who served properly by 66.7% had never had an occupational accident. This shows that nurses who acted wrongly while working in the Emergency Unit had more occupational accidents than those who served adequately. This is because there are still nurses who work not following established procedures, lifting patients or loads ignore ergonomic rules, do not use hand gloves when injecting or taking blood/fluid samples, and syringes that have been used are not discharged in places that have been provided.

Liza Salawati's research (2009) states that 23 nurses at the Emergency Unit Dr. Midiyato Suratani Naval Hospital Tanjung Pinang, who did not use PPE when working at 55.6%, had an occupational accident. According to Hartati (2006), nurses know the rules but do not implement them because they feel less flexible; for example when using rubber gloves and protective clothing.

It is also known that nurses who acted appropriately by 33.3% had experienced occupational accidents; this shows that nurses who responded suitably also experienced occupational accidents because the Hospital OSH program had not been formed so that knowledge about Hospital OSH was very lacking. The attitude disagreed with the Hospital OSH program.

The results of this study are per the Occupational Health Center, which states that occupational accidents among health and non-health workers show a tendency to increase in prevalence as a cause of frequent occupational accidents due to lack of nurse awareness and inadequate quality and skills of nurses (Pusat Kesehatan Kerja, Keselamatan Kerja di Sarana Kesehatan, 2007)). It is not possible to eliminate occupational accidents just by reducing unsafe conditions because the perpetrators of occupational accidents are human. Experts have not been able to find a truly effective way to eradicate risky employee actions (Tresnaningsih, 2007).

5. Conclusion

Occupational accidents for nurses in the Emergency Unit are by 72.8%, the knowledge of occupational accidents in nurses in the Emergency Unit is lacking (61.1%), the attitudes about occupational accidents in nurses in the Emergency Unit are good (72.2%) and the actions regarding the prevention of occupational accidents in nurses in the Emergency Unit are wrong (66.7%). There is a relationship between knowledge and the occurrence of occupational accidents in nurses in the Emergency Unit of Dr. Midiyato.SNaval Hospital Tanjung Pinang. There is no relationship between attitude and the presence of occupational accidents in nurses in the Emergency Unit of Dr. Midiyato.SNaval Hospital Tanjung Pinang. There is a relationship between actions with the occurrence of occupational accidents on nurses in the Emergency Unit of Dr. Midiyato.SNaval Hospital Tanjung Pinang.

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