



The Effect Analysis of The Risk Factor in Work Accident on Nurses at Dr. RM Pratomo Hospital Bagan Siapiapi

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Abstract

Work accidents in hospitals have a large percentage of work accidents compared to other industries by 41%. Based on the results of a survey conducted on 10 nurses at DR. RM Pratomo hospital, there are 6 nurses of whom have had work accident such as falling and being stabbed by a needle injection, meanwhile the other 4 nurses never had a work accident while working at the hospital. The purpose of this study hard was to analyze the effect of risk factors, namely the tenure, knowledge, attitudes, actions, the use of PPE for work accidents on nurses at DR. RM Pratomo hospital in 2021. The study used an analytical survey method with a cross sectional approach. The reseach population was all nurses as many as 124 people with a sample of 95 people who were taken using incidental sampling technique. The result showed that the p-value of the risk factor for years of service = 0,326, knowledge risk factor = 0,008, attitude risk factor = 0,241, action risk factor = 0,031, policy risk factor = 0,030 and risk factor for the use of PPE = 0,007. In other words, there is a relationship between knowledge, actions, policies, and the use of PPE with work acciedents while tenure and attitude have no relationship with work accidents. Data analysis in this study using univariate analysis, bivariate and multivariate with logistic regression test statistics. So that the results of the research are that there is an Effect for knowledge, actions, policies and the use of PPE on work accidents on nurses in C. Meanwhile, the risk factor for the use of PPE has a greater Effect than other risk factors in this study, namely exp (B) 53,296. It is suggested to the DR. RM. Pratomo hospital to increase supervision and use of PPE for nurses while working in the hospital to prevent accidents at work in hospitals.

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Introduction

A work accident is an event that does not happen by chance, but for a reason. Therefore, there is a cause that is expected so that further corrective actions are not taken to address that cause and with preventive efforts. Work accidents, similar accidents do not happen again (Hanif, 2016). The main cause of work accidents is the low application of occupational safety and health (K3) di kalangan industri dan masyarakat. Industry and society, the point of work accidents does not only cause fatalities and material losses for workers and employers or companies process as a whole, damaging the circle which will ultimately have an impact on the wider community (Jubaedah et al., 2020). The threat of workplace accidents in developing countries such as Indonesia is still very high.

The results of the 2016 National Safety council report showed that the occurrence of work accidents in hospitals was 41% greater than other industrial workers. Cases that often occur are needle sticks, sprains, back pain, scratches, burns and other infectious diseases. Another report in Israel had the highest prevalence nurses (16,8%) compared to other industrial workers, likewise in Australia where 813 nurses had needle sticks and 87% had experienced low back pain (Suharto&Ratna, 2016). Nurses in Indonesia are the largest part of the health workers who work in hospitals namely around 47,08% who interact the most with patients. In about 20 delegated and mandated nursing actions carried out and which have academic, ergonomic, and physical biological hazards, especially in the work of lifting patients, performing injections, stitching wounds, inseting infusions, taking blood samples and placing catheters (Ilham Hanafi, 2017).

Based on the number of work accidents in Riau province , it is stated to be high. In 2018, work accidents that occurred in hospitals were 12.528 or equivalent to 39,68%, but work accidents in Riau province in 2019 still very high or as much as 14.325. the in 2020 work accidents in hospitals in Riau province then increased to 15.295 cases (Handayani et al., 2010).

Nurses when working without using personal protective equipment according to standards can result in work accidents and cause occupational diseases. Needle stick injuries in nurses are a significant problem in health care institutions (Ali, n.d.). From the result of a survey conducted by reseachers, it was found that 6 nurses out of 10 nurses had an accident at work at DR. RM Pratomo hospital. This is because there are several risk factors for work accidents, namely years of service, knowledge, attitudes, actions, policies and the use of PPE that is still not applied. So that it can be a risk factor that affects work accidents that occur in hopitals.

It is necessary to supervise and provide socialization and training to omplement occupational safety and halth management at DR. RM Pratomo hospital, so that it can minimize the occurrence of work accidents in hospitals. So, that the researcher interested to conduct the research abaout analyze the effect of risk factors, namely years of service, knowledge, attitudes, actions, policies and the use of PPE in work accidents on nurses at DR. RM Pratomo hospital Bagan Siapiapi in 2021.

Research Method

The research design used is an analytical survey using a cross sectional approach (Utami & Lestari, 2019). The result of the chi-square test used are sig-p values $< \alpha = 0,05$, so there is no relationship between risk factors and work accidents in nurses. If value of sig-p $< \alpha$ value = 0,05, then there is no relationship between risk factors and work accidents in nurses.

Then the data that has been collected was processed by univariate biravariate and multivariate analysis with logistic regression test statistics. With this test, it will be known which risk factors have a greater Effect on work accidents in nurses in hospitals. The population of this study were all nurses at DR. RM Pratomo hospital as many as 124 people with a sample of 95 people taken using incidental sampling technique. This technique is used because of the limitations of reseachers in taking reseach samples.

Results

Based on the results of the analysis of the variables in the table: shows that the significant value of the probability of Tenure is $\text{sig-p} = 0,814$ or $> \alpha$ value = 0,05. This means that tenure does not have a significant relationship with work accidents on nurses at DR. RM Pratomo hospital. The result of the chi-square test showed that the significant value of the probability of knowledge is $\text{sig-p} = 0,000 < \alpha = 0,05$. This proves that knowledge has a significant relationship with work accidents on nurses at DR. RM Pratomo.

The attitude factor has a significant probability value, namely $\text{sig-p} = 0,410$ or $> \alpha$ value = 0,05. This proves that attitude does not have a significant relationship with work accidents on nurses at DR. RM Pratomo hospital. The significant value of the probability of action is $\text{sig-p} = 0,000$ or $< \alpha$ value = 0,05. This proves that action has a significant relationship with work accidents on nurses at DR. RM Pratomo. Nilai signifikan probabilitas kebijakan adalah $\text{sig-p} = 0,000$ atau $< \text{nilai-}\alpha = 0,05$. The value of policy probability craft is $\text{sig-p} = 0,000$ or $< \alpha$ value = 0,05. This proves that the policy has a significant relationship with work accidents on nurses at the DR. RM Pratomo. Likewise, the significant value of the probability of using PPE $\text{sig-p} = 0,000$ or $< \alpha$ -value = 0,05. This proves that the use of PPE has a significant relationship with work accidents on nurses at the DR. RM Pratomo hospital.

Table 1. The Cross Tabulation between Tenure, Knowledge, Attitudes, Actions, Policy and The Use of PPE with Work Accidents on Nurses

Variable	Work Accident				The total		Sig -p
	Have no experienced		Experienced		f	%	
	f	%	f	%			
Tenure							
Long	37	38,9	24	25,3	61	64,2	0,814
New	19	20,0	15	15,8	34	35,8	
Knowledge							
Well	46	48,4	37	38,9	48	50,5	0,000
Not good	10	10,5	2	2,1	47	49,5	
Attitude							
Positive	29	30,5	16	16,8	45	47,4	0,410
Negative	27	28,4	23	24,2	50	52,6	
Actions							
Well	47	49,5	6	6,3	53	55,8	0,000
Not good	9	9,5	33	34,7	42	44,2	
Policy							
Appropriate	43	45,3	3	3,2	46	48,4	0,000
Not appropriate	13	13,7	36	37,9	49	51,6	
Use of PPE							
Using the PPE	50	52,6	3	3,2	53	55,8	0,000
Not Use the PPE	6	6,3	36	37,9	42	44,2	
Total	56	58,9	39	41,1	95	100	

Table 3 shows that the result of the logistic regression test, it was found that the use of PPE has the largest exp (B) value of the other variables, namely 53,296. This means that the use of PPE has a significant effect of 53,296 times on work accidents compared to other variables.

Table 2. Logistic Regression Test

Variable	B	SIG.	Exp (B)
Knowledge	3,489	0,008	32,744
Actions	3,219	0,031	25,004
Policy	2,841	0,030	17,131
Use of PPE	3,976	0,007	53,296
Constant	-5,316	0,000	0,005

Discussions

1. The Effect of Tenure on Work Accidents on Nurses

Based on the results of the study showed that the variable period of service had a sig-p value of $0,326 > 0,05$, meaning that the period of service did not have a significant relationship with work accidents in nurses at DR. RM Pratomo hospital. The results of this study are in line with previous research conducted by Handayani in 2017 about the relationship between the use of work protective equipment for Rustic workers at PT Borneo Melintang Buana Ekspor Yogyakarta, where the results of the study indicate that there is no relationship between years of service and work accidents for workers in the Rustic, with p value = $0,813 > 0,05$ (Makassar, 2013). In addition, research conducted by Hikmawan in 2018 on factors related to the incidence of work accidents in car painting workshop workers in the city of Makassar, shows that there is no relationship between childhood and the incidence of work accidents with a value of $p = 0,215 < \alpha (0,05)$ (Badan Pengembangan dan Pemberdayaan Sumber Daya Manusia, n.d.).

From the comparison with other studies, the researcher assumes that the Tenure has no effect on occupational health. This can happen because working with a working age of more than 6 is still classified as a new worker. Usually do not know and about work environment in which they work. A high Tenure does not guarantee a person is safe from accidents, things like ignoring unsafe conditions and unsafe actions and prolonged exposure to toxic materials can have fatal consequences for the workers themselves. Similar to the results of this study, how most of the respondents have a long Tenure or more than 6 years, there are still workers who have work accidents. Supposedly with the increase in a person's Tenure, the knowledge and skills possessed by workers and the safety aspects of the work carried out will also increase. However, in this study it is clear that childhood does not really affect the occurrence of work accidents in workers.

2. The Effect and Knowledge of Work Accidents on Nurses

Based on the results of the study indicate that the knowledge risk factor has a sig-p value of $0,008 < 0,05$, this means that knowledge has a significant relationship with work accidents on nurses at DR. RM Pratomo. From the result of the logistic regression test, the exp (B) = 32,744, which means that the knowledge risk factor has an effect of 32,744 times on work accidents, at DR. RM Pratomo hospital. In line with research conducted by Rifai in 2017 on the relationship between knowledge and participation in occupational safety and health (K3) nurses with the occurrence of work accidents in hospital in Yogyakarta, shows that there is a significant relationship between the knowledge of nurses in the field of occupational safety and health (K3) with the incidents (p value = $0,003 < 0,05$), there is a significant relationship between the participation of nurses in the field of occupational safety and health with the incidence of work accidents (p value = $0,011 < 0,05$) (Perawat, 2020).

In addition, according to research conducted by Kumayas in 2019 about the relationship between knowledge and attitudes with the application of occupational health and safety (K3). For nurses at Bhayangkara Tk III Hospital Manado, it shows that the probability value on knowledge and application of K3 is 0,019 and the probability value is 0,000. So the conclusion of the study is that there is a relationship between knowledge and attitudes with the application of occupational health and safety (K3) on nurses at Bhayangkara Tk III Hospital Manado (Kumayas et al., 2019).

From the results of comparisons with other researchers, researchers assume that the knowledge risk factor has an effect on work accidents in nurses. One's knowledge factor is the main factor in determining decision-making behavior to achieve certain goals. So that a person is able to avoid the bad possibilities that occur as a result of the actions taken by him. That is, knowledge affects a person's behavior to act correctly without causing danger or risk to his health and safety in doing something.

3. The Effect of Attitudes Towards Work Accidents on Nurses

Based on the result of the study, it showed that the attitude variable has a sig-p value of 0,241 > 0,05, meaning that the attitude did not have a significant relationship with work accidents in nurses at the Hospital DR. RM Pratomo. This is in line with research conducted by Rori in 2018 regarding the behavior of health workers with compliance with using personal in the inpatient room of the Maria Walanda Maramis Hospital, North Minahasa. The results showed that there was no relationship between the attitude of health workers and compliance with using PPE according to the SOP at the Maria Walanda Maramis Hospital ($p=1.000$) (Syafira et al., 2020).

Likewise with the research conducted by Rachman in 2020 on the Relationship of Knowledge and Attitudes to the Behavior of Using Personal Protective Equipment at PT Sarandi Karya Nugraha Sukabumi. The results of this study indicate that there is no relationship between attitudes ($p=0,84$) with the behavior of using personal protective equipment at PT Sarandi in Karya Nugraha Sukabumi (Rachman et al., 2020).

From the results of comparisons with other studies, the researcher assumes that attitude is one factor has no relationship effect on work accidents on nurses. The result of this study found that nurses' unfavorable attitudes towards work accident prevention because they feel uncomfortable, this encourages nurses not to prevent work accidents. This is supported by the result of the questionnaire which shows that even though the respondent has a good attitude, there are still nurses who experience work accidents. Many nurses have complied with work safety signs, follow applicable to prevent work accidents, most of the nurses have checked their own health and some of the nurses have worked according to standard operating safety procedures.

4. The Effect of Actions on Work Accidents on Nurses

Based on the results of the study, it showed that the action variable had a sig-p value of 0,031 < 0,05, meaning that the action had a significant relationship with work accidents in nurses at the hospital DR. RM Pratomo. The result of the logistic regression test on the action obtained an exp value (B) of 25,004. This means that the action has an effect of 25,004 times on work accidents on nurses. This is in line with research conducted by Hidayat in 2018 on the Effect of Unsafe Action against Employee Work Accidents in PT. Freyabadi Indotama, shows that the regression coefficient is 0,227, which means that unsafe actions have a positive effect). Against the level of work accidents (Rifai, n.d.-a).

In addition, according to research conducted by Farhan in 2018 about the relationship between the actions of nurses with knowledge and attitudes toward aspects of occupational health and safety at USU Hospital, shows that there is a significant relationship between the actions of nurses and attitudes towards aspects of K3 ($p = 0,016$) (Rori et al., 2018).

From the results of comparisons with other studies, researchers assume that actions that do not meet occupational safety and health procedures from nurses are the main factors causes of work

accidents. This happens due to lack of awareness of nurses and inadequate skills of nurses regarding occupational safety and health in the workplace. Good actions in carrying out automatic accident prevention, the application of work safety will also run effectively in preventing work accidents for nurses.

5. The Effect of Policy on Work Accidents on Nurses

Based on the results of the study, it shows that the policy variable has a sig-p value of 0,030 < 0,05, meaning that the policy has a significant relationship with a work accident on a nurse at DR. RM Pratomy's hospital. The results of the logistic regression test for the policy variable show the exp (B) value 17,131. This means that inappropriate policies have an effect of 17,131 times on work accidents on nurses. This is in line with research conducted by Azizah in 2019 regarding the Relationship between Supervision, Work Operational Standards with the Occurrence of Work Accidents on Nurses in inpatients at Permata Bunda Hospital, Medan it shows that work accidents in nurses occur due to several factors. Including supervision. Standards of work operations and hospital physical conditions (Sholihah, Q. and Djohan, n.d.). Then Dwiari added in his 2019 research that the factors related to the health and safety of nurses in hospitals were gender, attitudes, leadership and availability of infrastructure (Rifai, n.d.-b).

From the results of comparisons with other studies so that researchers assume that hospital policy is one of the factors that can have an influence on work accidents. In fact, not many efforts have been made by the hospital to reduce the incidence of work accidents, namely by forming a hospital K3 committee to formulate policies, guidelines, SOPs and the third best program, providing OHS signs in every part of the hospital and providing including PPE in each installation according to the risks in the workplace installation in accordance with the risks in the workplace. However, these efforts have not been optimally implemented.

6. The Effect of Using PPE on Work Accidents on Nurses

Based on the results of the study indicate that the variable uses fire and has a sig-p value of 0,007 < 0,05. It means that the use of PPE has a significant relationship with work accidents in DR. RM Pratomy Hospital. The results of the logistic regression test on the PPE use variable show the exp (B) value of 53,296. This means that the use of PPE that is not used has a major Effect 53,296 times on work accidents on nurses. In line with research conducted by Hanafi in 2017 on the analysis of work accidents on nurses at the PKU Muhammadiyah Gamping General Hospital, Sleman Regency, shows that the cause of work accidents occurs due to human factors. Non-compliance with the use of PPE power, and lack of supervision (Sumamur, 2017).

In addition, according to Iriani's 2019 research on the relationship between education, knowledge, and use of PPE with nurses' work accidents at Sisma Medika Hospital, (p-value = 0,0017, OR = 5,688) (19) shows that there is a relationship between the use of PPE with work accidents (p-value = 0,0017, OR = 5,688). So from the comparison results with other studies, the research assumes that the use of PPE is a factor that has an Effect on work accidents. This incident is because the workers do not have a good awareness of work safety activities implemented by the hospital such as the use of PPE. The reason for nurses is that use of PPE is considered not very use for nurses. Furthermore, nurses delay, they can still complete work without using PPE so that there are still nurses who are not obedient to always use PPE. In Implementing occupational safety and health, proper and correct organization should also be required. It is in this connection that an Occupational Safety and Health Management System (SMK3) is needed and every organization needs to have. through the occupational health safety management system, nurses can always prioritize their safety by using PPE and can prevent work accidents.

Conclusions

The conclusions of this study are as follow :

1. On the Effect of risk factors, namely knowledge, actions, policies and the use of PPE on work accidents, while the risk factors for years of service and attitudes have no relationship with a work accident at DR. RM Pratomo hospital in 2021.
2. This research can be used as a reference for further research in the same field and focuses on one of the influential variables.
3. This study contributes to occupational safety and health research that focuses on occupational accidents and risk factors on nurses in hospitals. As well as contributions as a reference to hospital management in looking at risk factors for nurses' work accidents in hospitals.

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