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## #10637 Review

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### Submission

**Authors** Siti Kurnia Widi Hastuti, Annisa Intan Fadilla, Selly Apriansyah  
**Title** Factors Related to Nurse Compliance in The Implementation of Universal Precaution in The Inpatient Room One of Private Hospital in Yogyakarta  
**Section** Articles  
**Editor** Elsy Rosa

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## Factors Related to Nurse Compliance in The Implementation of Universal Precaution in The Inpatient Room One of Private Hospital in Yogyakarta

Siti Kurnia Widi Hastuti\*, Annisa Intan Fadilla \*\*, Selly Apriansyah\*\*\*

\* Correspondent Author: [Kurnia.widihastuti@ikm.uad.ac.id](mailto:Kurnia.widihastuti@ikm.uad.ac.id)

\* Universitas Ahmad Dahlan, Yogyakarta, Indonesia

### INDEXING

#### Keywords:

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Universal Precaution,  
Rawat Inap.

### ABSTRACT

*Universal Precaution* is efforts to prevent nosocomial infections (INOS) that must be cared for nurses and medical labor in performing any the act of nursing to prevent the transmission of cross infection. This study aimed to determine the factors associated with the application of Universal Precaution to nurses in the Inpatient Room of a Private Hospital in Yogyakarta. This study used quantitative analytic method with cross sectional approach. The population in this research is the nurse in patient amounted to 156 nurses. The sample taken by proportionate random sampling technique is number of 87 nurses. The data of the research is taken by observation and spreading question and processed by using *chi square* test. The results showed factors related to the behavior of implementing universal precautions are knowledge with a *p* value of 0.005 ( $p < 0.05$ ) and factors that have no relationship with nurse behavior such as attitudes with a *p* value of 0.619 ( $p > 0.05$ ), motivation with a *p* value of 1,000 ( $p > 0.05$ ), and work period with a *p* value of 1,000 ( $p > 0.05$ ). The factors that influence the behavior of nurses applying to the application of universal precaution are knowledge and things that do not affect attitudes, motivation, and work period.

*Universal Precaution* merupakan upaya pencegahan Infeksi Nosokomial (INOS) yang harus diperhatikan oleh perawat dan tenaga medis dalam melakukan setiap tindakan keperawatan untuk menghindari terjadinya penularan infeksi silang. Tujuan penelitian ini untuk mengetahui faktor-faktor yang berhubungan dengan penerapan *Universal Precaution* pada perawat di Ruang Rawat Inap Rumah Sakit Swasta di Yogyakarta. Penelitian ini menggunakan metode analitik kuantitatif dengan desain cross sectional. Populasi dalam penelitian ini adalah perawat di ruang rawat inap Rumah Sakit Swasta di Yogyakarta yang terdiri dari 156 perawat. Sampel diambil dengan menggunakan Teknik proportionate random sampling yang terdiri dari 87 perawat dan peneliti menentukan kriteria inklusi dan eksklusi. Data penelitian diperoleh dengan observasi dan kuesioner kemudian diuji dengan menggunakan uji *chi square*. Hasil penelitian menunjukkan faktor yang berhubungan dengan perilaku penerapan *universal precaution* adalah pengetahuan dengan nilai *p value* sebesar 0,005 ( $p < 0,05$ ) dan faktor-faktor yang tidak memiliki hubungan dengan perilaku perawat seperti sikap dengan nilai *p value* sebesar 0,619 ( $p > 0,05$ ), motivasi dengan nilai *p value* sebesar 1,000 ( $p > 0,05$ ), dan masa kerja dengan nilai *p value* sebesar 1,000 ( $p > 0,05$ ). Faktor yang berhubungan dengan perilaku penerapan universal precaution pada perawat adalah pengetahuan dan hal yang tidak berhubungan yaitu sikap, motivasi, dan masa kerja.

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### INTRODUCTION

Universal Precaution is an effort to prevent Nosocomial Infection (INOS) which must be carried out in all health services for patients, health care workers, and hospital visitors. The purpose of Universal Precaution is based on the belief to limit and prevent the danger/risk of transmission of pathogens through blood and bodily fluids from known and unknown sources<sup>1</sup>. Basic Universal Precaution includes washing hands to prevent cross-

infection, the use of personal protective equipment including gloves to prevent contact with blood and other infectious fluids, management of medical devices, management of needles and sharp instruments to prevent injury, and waste management<sup>2</sup>.

Nosocomial infections are a major problem faced by hospitals, research conducted by the World Health Organization (WHO) shows the prevalence of nosocomial infections ranges from 8.7% in 55 hospitals in 14 countries

originating from Europe, the Middle East, Asia Pacific, and Southeast Asia 10 % in Indonesia INOS ranges from 0-14.4%<sup>3</sup>.

The incidence of nosocomial infections in Indonesia in various types of hospitals is very diverse. The incidence of nosocomial infections in Indonesia was taken from 10 education hospitals that conducted surveillance in 2010, it was reported that the incidence of nosocomial infections was quite high at 6-16% with an average of 9.8%. The most common events are surgical site infections, urinary tract infections, respiratory infections, and blood flow infections<sup>4</sup>. Seeing the high incidence of nosocomial infections that occur both in the world and in Indonesia, it is necessary to reduce the number of incidents that is by applying hand hygiene. The prevention of infectious diseases is basically by maintaining personal hygiene, both hygiene care workers, patients, and hospital visitors. Transmission of nosocomial infections from person to person must be prevented by always maintaining hand hygiene after carrying out inspection activities and interaction activities in hospitals, one of which is by doing hand hygiene<sup>5</sup>.

Awareness of the importance of hand hygiene in health workers is needed in efforts to prevent nosocomial infections. The results showed that knowledge of hand hygiene is the most basic thing that must be possessed by a nurse. The knowledge possessed can influence nurses in implementing hand hygiene properly and correctly to prevent nosocomial infections<sup>6</sup>.

One of Private Hospital in Yogyakarta still has several nosocomial infections, the number of infections is still below the standards set by the Hospital. The number of nosocomial infections that occur is operating area infections (IDO) of 1, 13%, primary blood flow infections (IADP) of 0%, Ventilator-Associated Pneumonia (VAP) of 0.63 and% of urinary tract infections (UTI) of 0.082%.

One of the private hospitals in Yogyakarta, in protecting and preventing the transmission of infection for health workers and patients, has implemented universal precautions including SPO (Standard Operating Procedures) which nurses must adhere to in carrying out their clinical activities, but the implementation of universal precautions by health workers, especially nurses, is still not optimal. This is based on the discovery of 3 nurses who suffered from needle stick injuries, this was obtained from monitoring carried out by the PPI committee (infection prevention and control) which was carried out every 6 months and there were still numbers of needle sticks. The monitoring carried out by the PPI committee is also not

optimal, because the PPI committee has not fully monitored universal precautions, all that has been done is hand washing and the use of Personal Protective Equipment (PPE). PPE monitoring can only be seen from the availability of equipment, not in terms of the use of personal protective equipment (PPE) carried out by nurses. The results of observations by researchers on March 19, 2019 which were carried out in one of the inpatient wards found that there were 3 nurses in one ward who did not use gloves and masks when conducting the primary survey of patients. In addition, personal protective equipment, especially gloves, is only used when carrying out invasive measures, even though gloves should be used in every action taken on patients so that it can reduce the number of infections caused by contact between officers and patients in the hospital.

The purpose of this study was to determine the factors associated with the application of Universal Precaution to nurses in the Inpatient Room at One of Private Hospital in Yogyakarta.

## RESEARCH METHOD

The research design used in this study is quantitative analytic, using a cross-sectional design. Cross-sectional is a type of research in which the measurement of the variables is carried out only once, at a time. This study was conducted in the inpatient room of One of Private Hospital in Yogyakarta in June 2019. The population of this study was nurses in the inpatient room at One of Private Hospital in Yogyakarta, amounting to 156. The technique for sampling in this study used proportionate random sampling so that the study sample numbered 87 respondents.

The data collection used is the primary data collection. Measuring instruments used in this study are using questionnaires and observation sheets. Questionnaire was used to collect data on knowledge, attitudes, motivation and work period on the independent variables. Checklist is used to observe nurses' behavior while working / taking action on patients in implementing universal precautions on the dependent variable. This checklist sheet was prepared by researchers based on the Minister of Health Regulation No. 27 of 2017 concerning Guidelines for Infection Prevention and Control.

Observations were made in three observations. Researchers observed nurses who carried out the Universal Precaution procedure using the observation format. Data collection was carried out until the target number was met from each ward. Questionnaire sheets about Universal Precaution were distributed after the observation was

carried out in order to avoid observation bias. The questionnaire was distributed to nurses who met the inclusion and exclusion criteria. Data analysis in this research is a univariate and bivariate analysis. The bivariate analysis in this study used the chi-square test.

**RESULT AND DISCUSSION**

**Distribution of Nurses According to Motivation, Work Period, Knowledge, Attitude and Implementation of Universal Precaution**

In terms of motivation, the majority of respondents had high motivation, namely 61 nurses (70.1%). Motivation is the main key that determines the performance of nurses if nurses do not have good motivation in working then the implementation of universal precaution will not be able to run as it should. Nurse motivation shows work dissatisfaction that originates from extrinsic factors, therefore nurses work motivation is closely related to nursing performance, so aspects that can increase work motivation need to be managed properly to get good nurse performance results<sup>7</sup>.

In terms of years of service, it is known that the majority of nurses inpatient rooms at One of Private Hospital in Yogyakarta have work period of nurses (88.5%), while as many as 10 nurses (11.5%) who work <3 years with the new work period category. The work period is usually associated with time to start work, where work experience also determines one's performance. The longer the work period the skills in handling patients will be better because it has adjusted to the job<sup>8</sup>.

**Table 1. Distribution of nurses according to motivation, work Period, knowledge, attitude, and Implementation**

No	Variable	Category	Frequently	%
1	Motivation	High	61	70,1%
		Low	26	29,9%
2	Work Period	> 3 years	79	88,5%
		< 3 years	10	11,5%
3	Knowledge of Universal Precaution	High	55	63,2%
		Low	32	41%
4	The attitude of Universal Precaution	Good	46	52,9%
		Bad	41	47,1%
5	Universal precaution Implementation	Good	56	64,4%
		Bad	31	35,6%

The nurses who were respondents in this study, the majority had high knowledge of 55 nurses (63.2%). By having sufficient knowledge, nurses were expected to have critical thinking in making decisions regarding their actions. Lack of knowledge of certain objects due to a lack of information obtained. In addition to knowledge about management, the most important thing for nurses to have is knowledge of universal precautions where nurses are the first hand in dealing with patients during the examination room. Knowledge can be obtained through learning, with structured education and training<sup>9</sup>.

Nurses 'knowledge about universal precaution is very important to encourage the implementation of universal precaution programs because knowledge is a major factor in influencing nurses' behavior and performance. Nurses must know the definition of universal precaution, which is an act of controlling infection by all health workers, for all patients, wherever and whenever, where Universal precautions aim to control infections consistently and prevent transmission from health workers to patients and vice versa<sup>10</sup>

According to the table, nurses' attitudes were inpatient rooms of One of Private Hospital in Yogyakarta which had a bad attitude of 41 nurses (47.1%), while nurses who received good attitude categories were 46 nurses (52.9%). Attitude has a level based on intensity according to Notoatmodjo, consisting of receiving, responding, appreciating, responsible. Attitudes can also be formed through personal experience, the influence of others who are considered important, cultural influences, mass media, educational and religious institutions, and emotional influence<sup>11</sup>.

The positive attitude of nurses in the form of beliefs, abilities, and tendencies to carry out universal precautions in all patients does not look at the disease or its diagnosis to prevent transmission of infections through blood and body fluids. Most nurses agree and support in taking action to prevent nosocomial infections such as nurses always use disposable gloves when handling exudates, masks, gowns, and glasses should be used if splashes and contacts are coming out of infectious fluids, proper handwashing techniques using Aseptic techniques, nurses use gloves when there are cuts or scratches on the skin while performing infusion should wear gloves because there is no risk of nosocomial infection<sup>12</sup>.

According to the table, the behavior of applying universal precaution can be seen that the majority of nurses are not good at applying universal precaution as many as 31 nurses (35.6%), while nurses who are good at universal

precaution are 56 nurses (64.4%). The effort of the hospital in controlling infection both to protect the patient and the workforce is to apply universal precautions. According to Nursalam, universal precautions consist of various actions consisting of washing hands as a prevention of cross-infection; the use of PPE such as gloves, masks, protective goggles, and aprons to prevent the possibility of splashing from the patient's body; sharp instrument management (there is a special place to accommodate syringes, used ampoules bottles, etc.); medical device sterilization; waste management; linen management<sup>13</sup>.

The behavior of nurses to adhere to the application of universal precaution is seen as very important in efforts to prevent infection and can improve the quality of health

services. Nurses are health workers who are always in direct contact with patients for a relatively long time<sup>14</sup>. The application of universal precautions has not been fully implemented well by nurses.

**Relationship between Knowledge With Behavior of Universal Precaution Implementation By Nurses**

Based on the bivariate analysis between knowledge and the application of universal precaution by nurses, the results are obtained:

**Table 2. Relationship between Knowledge with Behavior of Universal Precaution Implementation by Nurses in the Inpatient Room One of Private Hospital in Yogyakarta**

Knowledge	Application						P value	RP (95%CI)
	Not Good		Good		Total			
	n	%	n	%	n	%		
Low	18	20,7	14	11,5	32	36,8	0,005	2,380 (1,353-4,286)
High	13	19,6	42	36,8	55	63,2		
Total	31	35,6	56	64,4	87	100		

Based on statistical tests using the chi-square test, the p-value of  $0.005 < \alpha < 0.05$  means that there is a relationship between knowledge and the behavior of universal precaution in nurses, with an RP (Prevalence Ratio) of 2.380, meaning that respondents who have a low level of knowledge have risks of 2,380 times having the behavior of universal precaution which is not good compared to respondents who have high knowledge. With a p-value of 0.005, which means that there is a relationship between the level of knowledge with the behavior of universal precaution in nurses and statistically significant (95% CI 1,353-4,286).

Based on the results of the study found there is a relationship of knowledge with the behavior of the application of universal precaution, it can be influenced by the high level of knowledge of nurses, with high knowledge will have an impact on the behavior of nurses in the hospital, especially in conducting the behavior of applying universal precaution as an effort to prevent nosocomial infections. Knowledge is a very important factor in determining a person's actions so that behavior based on knowledge will last longer than those that do not, meaning that the higher a person's knowledge is expected the better

the behavior that is shown. Knowledge has a significant relationship to the implementation of universal precaution, namely the knowledge gained by respondents during work as nurses affect the implementation of universal precaution<sup>15</sup>. Knowledge of cognitive is dominant which is very important for the formation of one's actions (overt behavior) if someone has good knowledge it will influence positive actions for him. Whereas if someone has a low level of knowledge then the behavior is not good because doing something is not based on good knowledge so that it can cause behavior that is detrimental to the environment and himself<sup>11</sup>.

The results of the analysis of researchers in this study indicate that there is a relationship of knowledge with compliance with the implementation of hand hygiene because most nurses' knowledge has high knowledge. High knowledge will have an impact on compliance by nurses in hospitals, especially in conducting compliance with the implementation of hand hygiene as an effort to prevent nosocomial infections. Knowledge of hand hygiene is a basic thing that must be possessed by a nurse, with that knowledge nurses can apply hand hygiene properly and correctly to prevent nosocomial infections in hospitals.



This is also reinforced by Miftahul research showing that there is a significant relationship between the level of knowledge and the behavior of universal precaution implementation that if the level of knowledge of health workers is getting higher then the application of universal precaution will also be better, and vice versa if the level of knowledge of health workers is getting lower then the application of universal precaution will also be less good<sup>16</sup> Nurses who have a good level of knowledge need to retain and increase their knowledge, while nurses who have a good level of knowledge need to get attention so that they get information or education about the prevention of nosocomial infections, especially in the application of universal precaution in hospitals. According to Wawan and Dewi, knowledge is very closely related to education, where it is expected that with higher education the person will also broaden his knowledge, conversely if lower education will lack information obtained<sup>17</sup>.

The level of education also influences the reception of information, for example when given information about how to do the six steps of washing hands that are standardized by WHO, if higher education will be more open and faster to absorb and apply information. Education has an important role in determining human quality, with a high education of nurses will improve the quality of nursing care in hospitals<sup>18</sup>.

**Relationship between Attitude with Behavior of Universal Precaution Implementation by Nurses**

Based on the bivariate analysis between attitude and the application of universal precaution in nurses, the results are obtained:

**Tabel 3. Relationship between Attitude with Behavior of Universal Precaution Implementation by Nurses in the Inpatient Room One of Private Hospital in Yogyakarta**

Attitude	Application				Total	P value	RP (95%CI)
	Not Good		Good				
	n	%	n	%			
<b>Not Good</b>	13	14,9	28	32,2	41	47,1	
<b>Good</b>	18	20,7	28	32,2	46	52,9	0,0619
<b>Total</b>	31	35,6	56	48,3	87	100	0,810 (0,456-1,441)

Based on statistical tests using the chi-square test obtained p-value of 0.619 > α 0.05, meaning that there is no relationship between attitude and the behavior of universal precaution in nurses, nurses, with an RP (Prevalence Ratio) value of 0.810 meaning that respondents who have no attitude both have a risk of 0.810 times having the behavior of applying universal precaution that is not good compared to respondents who have a good attitude. With a p-value of 0.619 which means there is no relationship between the level of knowledge with the behavior of universal precaution in nurses and not necessarily a risk factor that influences the behavior of nurses (95% CI 0.456-1.444)

universal precaution can be caused by attitude not yet an action, although nurses have a good attitude is not necessarily in carrying out behavior especially in carrying out universal precaution has good application behavior.

The results of the bivariate analysis that have been done regarding the relationship of attitude with the behavior of universal precaution application with the chi-square test obtained p-value of 0.619 (p > 0.05), then Ho is accepted, which means there is no significant relationship between attitude with the behavior of universal precaution application at One of Private Hospital in Yogyakarta. the absence of a relationship between attitude and behavior of

Attitude is a reaction or response of someone who is still closed to a stimulus or object. Attitude is not yet an action or activity but is a 'predisposition' of an action or behavior. That attitude is still a reaction to an object in a certain environment as an appreciation of the object. Yuliana's research shows that there is no relationship between attitude and nurse compliance. For an attitude to be manifested in an action, it requires supporting factors or enabling conditions such as the availability of facilities, as well as information and training<sup>19</sup> This may be influenced by the consistency of one's attitude towards consistency behavior. Attitude is the appropriateness of the statement of attitude expressed with its response to the object. Attitudes gained through experience will have a direct influence on the behavior that will be realized only if conditions and situations allow. What conditions, what time, and how the situation when the individual must express his attitude are

some of the determinants that greatly affect the consistency between attitude and statement and between the statement of attitude and behavior<sup>20</sup>

Norci in his research said that the attitude can help to achieve goals so that someone will be positive or negative because there are nurses who feel able or unable to take action by the procedures in washing hands<sup>21</sup>. Attitudes can also be formed through personal experience, the influence of others who are considered important, the influence of culture, mass media, educational and religious institutions, and emotional factors. Attitude consists of 3 components, namely trust (belief) means how one's belief or opinion of an object, affective means how the person's assessment of the object, conative, meaning a tendency to act<sup>11</sup>

The results obtained from the questionnaire filled out by nurses and the results of field observations showed that nurses' attitudes towards the implementation of hand hygiene when taking nursing actions were still low. Nurses

often do not do hand hygiene before contact with the patient and after the patient's environment. Bad attitudes of nurses are also often found when wearing gloves, nurses do not do hand hygiene before or after using gloves. According to Rohani and Setio, gloves cannot replace the function of washing hands, it is because of the possibility of minor damage that is not visible. For that reason, handwashing must be done before and after removing the gloves, gloves must be replaced if there is a torn, dirty and perforated<sup>22</sup>.

**Relationship between Motivation with Behavior of Universal Precaution Implementation by Nurses**

Based on the bivariate analysis between motivation and the application of universal precaution in nurses, the results are obtained:

**Tabel 4. Relationship of Motivation with Behavior of Universal Precaution Implementation by nurse in the Inpatient Room One of Private Hospital in Yogyakarta**

Motivation	Application						P value	RP (95%CI)
	Not Good		Good		Total			
	n	%	n	%	n	%		
Low	9	10,3	17	16,1	26	29,9		
High	22	25,3	39	44,8	61	70,1	1,000	0,960 (0,514-1,793)
Total	31	35,6	56	64,4	87	100		

Based on statistical tests using the chi-square test obtained a p-value of 1,000 >  $\alpha$  0.05, meaning that there is no relationship between motivation and the behavior of applying universal precaution to nurses. Chi-square test results also show the value of the interval ratio (RP) of 0.960 with a range of confidence intervals (CI) 0.514-1.793 which includes the number 1, so it can be concluded that not necessarily a risk factor that affects nurses' behavior in the application of universal precaution at home One of Private Hospital in Yogyakarta.

Based on the results of the study found there is no relationship between motivation with universal precaution implementation behavior, high or low motivation of nurses still have poor or non-compliant application behavior, good implementation behavior does not arise from motivation but arises from within each nurse if the nurse is aware that universal precaution is important for every health worker, so nurses in applying behavior will be good. Sani's research stated that the high motivation possessed by nurses would

be able to increase nurses' compliance in carrying out the six steps of washing hands properly and correctly<sup>23</sup>.

Factors that influence a person's motivation are due to personal needs, goals, and perceptions of the person or group concerned, how those needs and goals will be realized. Coworkers are also one of the factors that can influence a person to take any action if the environment is doing good things such as implementing universal precaution well, indirectly, that person will follow the same thing<sup>24</sup> Motivation is an impetus for someone to achieve his desires so that the suitability between personal needs and organizational goals is achieved. Motivation is an internal, psychological and mental condition of human beings such as various desires, hopes, needs, encouragement, and preferences that encourage individuals to achieve the desired goals or get satisfaction with their actions<sup>25</sup>.

Nurse motivation improvement can be positively done through the provision of rewards (awards) to nurses who have good compliance with the implementation of hand hygiene according to standards. So far, there has been

no reward. Also, involving nurses in training programs, seminars, and workshops can increase nurses' motivation positively. While the negative motivation increase can be done with the punishment given to nurses who are not compliant in implementing hand hygiene, namely through reprimands and sanctions so that nurses are more motivated to implement hand hygiene properly. This is supported by Notoatmodjo's theory which states that there are positive motivations that always give gifts or rewards to members who succeed in doing well and negative motivations that

always provide penalties or threats to members who commit the wrong actions<sup>11</sup>

**Relationship of Work Period with Behavior of Universal Precaution Implementation by Nurses**

Based on the bivariate analysis between tenure and the application of universal precaution in nurses, the results are obtained:

**Tabel 5. Relationship between Work Period and Behavior of Universal Precaution Implementation by Nurses in Inpatient Room One of Private Hospital in Yogyakarta.**

Work Period	Application				Total	P value	RP (95%CI)
	Not Good		Good				
	n	%	n	%			
New	4	4,6	6	6,9	10	11,5	
Long	27	31	50	57,5	77	88,5	1,000
<b>Total</b>	31	35,6	56	64,4	87	100	1,141 (0,504-2,584)

Based on statistical tests using the chi-square test obtained a p-value of 1,000 >  $\alpha$  0.05, meaning that there is no relationship between tenure and the behavior of universal precaution in nurses. The value of the prevalence ratio (RP) shows the number 1,341 while the confident interval (CI) shows the number 0.504-2.584, which includes the number 1, so that conclusions can not be drawn is not a risk factor that affects nurses' behavior in applying universal precaution at One of Private Hospital in Yogyakarta.

lead to compliance. So it can be concluded that nurses who have a longer working period should have better compliance in carrying out a job<sup>26</sup>

Based on the bivariate results that have been carried out on the variable of work period with the behavior of applying universal precaution with the chi-square test obtained p-value of 1,000 ( $p > 0.05$ ), then Ho is accepted meaning there is no significant relationship between work period with the behavior of universal application precaution at One of Private Hospital in Yogyakarta.

The results supported by other studies show that there is no meaningful relationship between tenure and infection prevention adherence behavior in the Orthopedic Hospital Prof.Dr.R. Soeharso Surakarta. The cross-tabulation shows that there is no tendency for nurses with longer work periods to have better compliance than with shorter work periods and vice versa<sup>27</sup> Other research also shows that there is no meaningful relationship between tenure and universal precaution, cross-tabulation shows work relationship with universal precaution. shorter and vice versa<sup>28</sup> A high work period does not make a person obedient, the obedience can arise from within the person, not how long the person is working<sup>29</sup>.

In this study, when viewed from the work period, nurses who have the behavior of applying universal precaution that is not good most occur in nurses who have a long work period of 27 nurses with a percentage of 31%. The longer a person has to work, the experience and skills in carrying out tasks are also getting better, in this case, good behavior in implementing universal precaution. The length of work is an individual characteristic that shapes individual behavior so that individuals increasingly understand the conditions of the workplace and ultimately

**CONCLUSION**

Based on the results of research on factors related to the application of universal precaution, it can be concluded (1)There is a significant relationship between the level of knowledge with the behavior of nurses in the application of universal precaution based on the value of  $p = 0,005$  ( $p < 0.05$ ), (2) no significant relationship between attitudes and nurses' behavior in the application of universal precaution with a value of  $p = 0.619$  ( $p > 0.05$ ), (3) No significant relationship between motivation and nurses' behavior in

applying universal precaution with a value of  $p = 1,000$  ( $p > 0.05$ ), (4) No relationship between work period with nurses' behavior in applying universal precaution with a value of  $p = 1,000$  ( $p > 0.05$ )

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<p><b>Nama Instansi Penulis (dalam bahasa Inggris)</b></p> <p><b>* Bila lebih dari satu instansi gunakan numbering sesuai dengan urutan penulisnya</b></p> <p>--</p> <p><i>Author's Institution (in English)</i></p> <p><b>* If there were more than one institution, please use numbering in accordance with the order of authors</b></p>	<p>Faculty of Public Health, Universitas Ahmad Dahlan</p>