ORIGINAL RESEARCH

THE RELATIONSHIP BETWEEN KNOWLEDGE OF THE USE OF PERSONAL PROTECTIVE EQUIPMENT AND THE SELF EFFICACY OF PUSKESMAS NURSES AGAINST COVID-19 MANAGEMENT

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ABSTRACT	Keywords
Introduction: The COVID 19 pandemic is a case which continues to be felt by the community especially health workers. The purpose of this study was to analyze the relationship between the knowledge of the use of personal protective equipment with the Puskesmas Nurses self-efficacy on the management of COVID 19. **Method:** used in this study was analytic descriptive with a cross-sectional approach and used 146 samples surveyed online for 1 month based on inclusion and exclusion criteria. The variable knowledge of the use of personal protective equipment was measured using a questionnaire developed by researchers based on the personal protective equipment guidelines by the Covid Task Force 19; Ministry of Health, while the variable of self-efficacy uses the *General Self-efficacy Scale questionnaire* by Schwarzer and Jerusalem. **Result:** showed a significant relationship between the knowledge of the use of personal protective equipment with the efficacy of the Puskesmas Nurse on the management of COVID 19 *p-value* 0.016. OR 2,780 which means nurses who have knowledge using good personal protective equipment have an opportunity of 2,780 times to have a good self-efficacy (sure) to the management of COVID 19 compared to nurses who have less knowledge. **Conclusion:** it is necessary to develop human resources including nurses conducted by the government as policy makers. Through this research, the researcher proposes that further researchers can develop this research by linking other factors that can influence nurse self-efficacy.	**COVID 19, Nurses, Personal Protective Equipment, Self-Efficacy**

INTRODUCTION

Pandemic Corona Virus Diseases (Covid 19) is a case that continues to be felt since December 2019 until now. Kemenkes, (2020) explained that in relation to the virus, there are 2 types of coronaviruses identified as causes of diseases with severe symptoms such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). The virus that causes COVID-19 is called Sars-CoV-2, this corona virus is a zoonotic virus (transmitted between animals and humans). Previous studies have suggested that SARS is transmitted from civet cats to humans and MERS from camels to humans.

Furthermore, the animal that is the source of COVID-19 transmission is still unknown. In other situation the virus is very easily transmitted between humans and humans, which causes an increase in the incidence of cases worldwide. The

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prevalence of the Covid 19 case is not only seen in Indonesia, but the whole world has reported the number of events. Globally shows the number of cases to date 10 million cases with a mortality rate of 512 thousand per 1 million population. Further explained in the Asian region Indonesia ranks third with a number of 57 thousand cases with an increase in 1000 cases every day after India and Bangladesh and has a classification of community transmission (WHO, 2020).This shows that the data is quite significant so that it also influences and impacts on productivity of primary and secondary health services, specifically for health workers, especially nurses as frontliners to overcome COVID-19 problems.

More health workers, especially nurses as frontliners, are affected by the COVID pandemic problem 19. The impact caused in the process of providing COVID-19 treatment is fatigue, especially for a long time. Further explained other impacts of the limited Personal Protective Equipment (PPE) and how to use it (Bagnasco et al., 2020). With these impacts caused significant problems including many health workers who have become victims or infected with the virus. In Indonesia based on identification by the Indonesian National Nurses Association (PPNI) the data showed 123 positive Nurses COVID-19 (www.covid19ppni.id). The importance of training and the provision of PPE for health workers should not be overlooked because of the urgent need, in addition to the results of previous studies also provide an explanation of increasing nurses' knowledge of the use of Personal Protective Equipment (PPE) significantly impacting the safety of the implementation of actions (Apriluana et al., 2016).

Knowledge is a very important domain for the formation of overt behavior. Hockenberry & Wilson, (2013) explained that someone who has good knowledge will increase motivation for the individual, but if you have less knowledge will have an impact on lack of motivation. This is in line with research conducted by Barati et al., (2020) explaining his study of Iranian health care nurses by finding the results of one of the factors that influence COVID 19 prevention behavior is motivation based on good knowledge. This is in line with other research which explains that there is a significant relationship between motivation and the use of personal protective equipment in performing actions or services. Further explained to increase motivation requires good knowledge (Said & Darmawan, 2014).

In addition to the knowledge factor, self-efficacy is also very necessary during the COVID 19 pandemic. This is in line with research conducted by Mariani, (2017) explaining that the resilience of nurses who perform services in the infection room is significantly influenced by self-efficacy and good expectations. Furthermore, studies conducted provide a clear picture of the longer the health workers, especially nurses in the care room COVID 19 in line with increased work stress. Another explanation from this study is that worker fatigue also affects the level of stress in nurses caring for COVID 19 confirmed patients (Shen et al., 2020).

This research is supported by studies conducted by Putra dan Susilawati, (2018) with the result that the higher the level of self-efficacy, the lower the stress level experienced by nurses. Preliminary studies conducted by researchers with the interview method concluded that there were many nurses who felt unsure or refused to be involved with COVID 19 services on the grounds of fear of infection, unsafe and insufficient personal protective equipment, poor physical status, this was influenced by the level stress is quite high. Explanation of the phenomenon above researchers feel challenged to see the relationship of the

knowledge of nurses who are in primary health care about the use of personal protective equipment based on the level of PPE with the level of self-confidence or self-efficacy to the management of COVID 19.

METHODS

The research design used in this study is a descriptive analytic with *cross-sectional* approach. The study population was all nurses working in the scope of primary services, then the sample was taken based on the purposive sampling method, this is because the researchers previously set inclusion criteria as the target sample. The sample was selected based on the inclusion criteria set by the researcher, namely nurses who work in primary care, have a minimum education diploma in nursing, are willing to be research respondents, so that the number of samples that meet the criteria and are used in this study is 146 nurses surveyed representing provinces throughout Indonesia. The variables of this study were measured using a questionnaire consisting of 3 parts or demographic data, knowledge and self-confidence questionnaires. The knowledge questionnaire uses an assessment based on the Guide to the Use of the Covid Task Force Personal Protective Equipment 19, (2020) (Cronbach's Alpha 0.889) and the self-efficacy questionnaire uses The General Self-Efficacy Scale (GSE) Schwarzer and Jerusalem, (2010) (Cronbach's Alpha 0.807).

The questionnaire used has been through the process of translation from English to Indonesian by not changing the content. The data of this study were analyzed based on univariate analysis (Age, Education, Work Experience) and Bivariate analysis used SPSS version 23 with the *Chi-Square* test technique to test the hypothesis (Knowledge of the use of Personal Protective Equipment with Nurse Self efficacy).

RESULTS

Table 1. Statistical Description of Nurse Respondent Characteristics

No	Variable	n	%
1	**Age**		
	Young Adults (24-35)	76	52.1
	Old Adult (36-58)	70	47.9
2	**Education**		
	Secondary Education (D3-Sarjana)	70	47.9
	Further Education (Ners-Doctor)	76	52.1
3	**Work Experience**		
	< 5 Year	80	54.8
	≥ 5 Year	66	45.2
4	**Knowledge of the Use of Personal Protective Equipment**		
	Less	35	24.0
	Good	111	76.0
5	**Nurse Self-Efficacy**		
	Not sure	64	43.8
	Sure	82	56.2

Source: Primary Data, June 2020

Based on Table 1, it is found that the percentage results of the characteristics of the respondents. The results of respondents who have young adulthood (24-35 years) amounted to 52%, this is in line with the level of education owned by the majority of nurses having a level of Further Education (Ners-Doctor) of 52.1%. However, work experience shows that there are 54.8% more nurses who have worked for less than 5 years compared to those who have worked for more than 5 years. Reviewed based on nurse knowledge in using Personal Protective Equipment showed 76% had good knowledge, while nurse self-efficacy in the management of COVID-19 56.2% were sure.

Table 2. Results of Bivariate Analysis (Relationship between Knowledge of the Use of PPE and Self Efficacy of Nurses)

Knowledge of the Use of Personal Protective Equipment	Self-Efficacy				Total	%	OR (95% CI)	p-value
	Not Sure		Sure					
	n	%	n	%				
Less	22	62.9	13	37.1	35	100		
Good	42	37.8	69	62.2	111	100	2.780	0.016
Total	64	43.8	82	56.2	146	100		

Source: Primary Data, June 2020

Table 2 shows the correlation between knowledge and self-efficacy of nurses. The results found that 62.2% had good knowledge in line with good self-efficacy. Another thing was found that 37.1% had less knowledge with a good level of self-efficacy (sure). The results of the statistical test showed a *p value* of 0.016, which means that there is a significant relationship between the knowledge of using personal protective equipment and the self-confidence of nurses in the management of COVID 19. From the results of the analysis, it was also found that the OR (95% CI) = 2.780, meaning that nurses who have knowledge. The good ones have a chance of 2.780 times to have good self-efficacy than nurses who have less knowledge.

DISCUSSION

Nurses are one of the health workers who play an important role in handling COVID 19 and are positioned at the forefront. Previous research explains that nurses as the front guard are very vulnerable to exposure to this virus, this also contributes a significant impact seen from the level of anxiety and stress and is felt continuously (Bagnasco et al., 2020). This is in line with research conducted by Dubey et al., (2020) explaining that along with the increase in the number of cases, it also has a psychological impact on health workers such as the stigma received by health workers makes nurses stressed so that it reduces the productivity of health workers, especially nurses in handle the problem of the COVID 19 pandemic. Therefore, it can be concluded that there is a need for increased knowledge regarding the use of Personal Protective Equipment (PPE), this is the focus of attention because health workers are exposed to the virus due to incorrect use of PPE.

Increasing knowledge of the use of PPE needs to be done every certain period. The results of this study illustrate that there are still 24% of nurses who have insufficient knowledge. This is in line with research conducted by Saqlain et al., (2020) on health workers in Pakistan showing that 40.6% have less knowledge. Further elaborating the results of this study found that health workers who have good knowledge have the opportunity 2,247 times to provide good and consistent service. Another study conducted in China showed 11% of nurses had insufficient knowledge and showed a connection with errors in providing services (Zhang et al., 2020). Analysis of the results of the questions from this study indicate that nurses do not know clearly and clearly about the location and position of the use of personal protective equipment at various levels. However, conditions like this have a psychological impact that can be seen with the naked eye related to anxiety, stress and the level of confidence of nurses in providing COVID 19 treatment.

The psychological impact on health workers, especially nurses who stand at the frontliner, is very clear. The results of this study provide an overview regarding the level of self-efficacy of nurses in providing

COVID 19 services by showing 43.8% feel unsure about being involved in COVID 19 services. The results of telephone interviews with 10 nurses also showed 7 out of 10 felt unsure about providing COVID 19 services on the grounds that they are afraid of being infected, avoiding stigma in society, are anxious because they are afraid to use and take off the PPE they use. The results of this study are in line with the results of a survey conducted by Shechter et al., (2020) on nurses in New York health services showing that 57% showed acute stress, 48% depression and 33% showed signs and symptoms of anxiety. Furthermore, it is explained that this is related to the coping level of nurses or health workers, so that the recommendations of this study need to develop a program to overcome psychological impacts including self-efficacy, one of which is through training and increasing knowledge so that through this program health workers can be facilitated in relation to their psychological conditions. Therefore, it can be concluded nurses who have good psychological conditions will be able to provide maximum health services.

Indonesia is the most populous country that can also contribute to the incidence of COVID 19 cases. Nurses are one of the affected by this pandemic and this is a challenge especially for the government as policy makers, the results of research obtained have found that the government should be faster, more effective and comprehensive. overcoming this pandemic, especially for health workers through increasing knowledge that is better for nurses so that it can contribute to the amount of self-efficacy in treating COVID 19 (Hofmeyer et al., 2020; Pragholapati, 2020). The results of this study indicate that there is a significant relationship between knowledge of the use of personal protective equipment and nurses' confidence in the

management of COVID 19 with a p value of 0.016. This research is in line with the results of a study conducted by Bhagavathula et al., (2020) explaining that nurses' ability to treat COVID 19 is based on the level of knowledge a nurse has. Furthermore, it was explained in this study that 56.6% of nurses who had poor knowledge were also affected by the COVID 19 virus so that many health workers, especially nurses, had levels of stress and anxiety that affected nurses' self-confidence (Huarcaya-victoria, 2020).

Other studies provide a picture of self-efficacy proven to play a significant role in a variety of human endeavors. Nurses are more likely to survive service errors when they have high self-efficacy. Conversely, a nurse with low self-confidence has difficulty, stress and anxiety are more likely to occur. Stress and anxiety can interfere with performance, reducing levels of self-confidence even more. However, people called Bandura overcoming self-efficacy are more able and comfortable to perform threatening tasks, where they may not experience many failures, because they work not with high levels of anxiety (Pragholapati, 2020).

The results of this study also provide a statistical picture with an OR value of 2.780, which means that nurses who have knowledge of the use of good personal protective equipment have a 2.780 times chance of having good self-belief (sure) about the management of COVID 19 compared to nurses who have less knowledge. Other research supports the results of this study which is found to be of nurses who have good knowledge has a 2.224 times chance of providing good and consistent service and also reduces the level of anxiety and fatigue in nurses (Hofmeyer et al., 2020; Saqlain et al., 2020). Therefore, it is considered very important to be able to make service improvements that begin with improving the quality of human resources.

CONCLUSIONS

The results of this study have a significant relationship between knowledge of the use of personal protective equipment for Puskesmas nurses and self-efficacy in the management of COVID 19. The results of this study have a direct effect on the role of community nurses, especially as direct service providers to the community. Increasing the ability of nurses needs special attention so that nursing services continue to be consistent. This attention is not only from one part but from various levels of government which are classified as cross-sectoral and cross-program in one service system. The researcher recommends that further research be able to continue the study by developing various variables such as other factors that also influence nurses' confidence in the management of COVID 19.

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