

## Analysis of Personal Protective Equipment in The Pandemic Period of Covid-19 on Medical Recording and Health Information Officers

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### ABSTRACT

One of the efforts to stop the transmission of Covid-19 to health workers is using masks, face shields, protective gowns, and gloves. PPE (Personal Protective Equipment) is vital to reduce the risks of contracting Covid-19. However, using complete PPE will significantly disrupt the process and way of working, especially when the availability of PPE is increasingly tricky during a pandemic. This study aimed to determine the factors that influence the use of personal protective equipment during the pandemic by medical record officer. The research method used was a quantitative observational analytic study using a cross-sectional design. The sampling technique used a total sampling of 56 medical record officers in Kuningan, Indonesia. Data were obtained through interviews and observations. The study results of the factors that influence the use of personal protective equipment during a medical record officer's pandemic are knowledge of the use of PPE, attitudes and use of PPE, and availability of PPE with use. The information obtained in this study is that more and more medical record officers in hospitals are significantly at risk of Covid-19 transmission. Therefore medical record officers are expected to better protect themselves by using complete PPE when dealing with patients.

**Keywords:** Attitude, Personal Protective Equipment, Covid-19, Medical Record, Health Information



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## 1. INTRODUCTION

More than 117 million cases of covid-19 were reported worldwide (Yeh & Tung, 2021), resulting in more than 2.6 million deaths (Hansen et al., 2021). Data from the Centers for Disease Control and Prevention (CDC) states that at least 64,479 health workers in America were infected covid-19 and 309 deaths due to Covid-19 (Podboy et al., 2020). In Italy, 10% of medical personnel are affected by the total number of patients infected with the coronavirus (Felice et al., 2020). In addition, Spain recorded at 22% of the cases in medical personnel (Suárez-García et al., 2020), and in Malaysia, there were 5.8% of positive cases in health workers (Hashim et al., 2021). In Indonesia, 647 medical and health workers who have died from being infected with covid-19 (Pramana et al., 2021).

Covid-19 is spread from person to person transmission of the virus through direct contact (Cho et al., 2020; Hu et al., 2020; Opel et al., 2021), and the splashing of infectious droplets onto the mucosal layer is the primary method of transmission (Park, 2020; Sosnowski, 2021). Control of droplet transmission hazards in health services requires comprehensive control activities, including technical control, administrative control, and using Personal Protective Equipment (PPE) (Conly et al., 2020; Melo et al., 2021; J. Wong et al., 2020).

Personal protective equipment (PPE) is a tool to protect workers from injuries or diseases from chemical, biological, radiation, physical, electrical, and other hazardous contacts (Javed et al., 2022; Nill, 2019; Onyango, 2022). To stop the transmission of covid-19 by using personal protective equipment,

using PPE is very important to reduce the risk of contracting covid-19 (Aloweni et al., 2022; Chaka et al., 2022). Deaths due to covid-19 can be prevented with the proper use of PPE, especially by wearing masks, face shields, gowns, and gloves. The use of PPE is the lowest level of control because it is difficult to obtain when its use is massive, it is often not the right choice, and how to use it is uncomfortable, so it requires supervision of compliance and the accuracy of use.

The transmission of covid-19 occurs between officers where they do not have signs and symptoms from repeated meetings in closed rooms. The use of complete PPE will certainly greatly disrupt the process and method of working, including when the availability of PPE is increasingly difficult during a pandemic. This study aimed to determine the factors that influence the use of personal protective equipment during the pandemic by medical record officer.

## 2. METHOD

This research is an analytic observational quantitative with a cross sectional study design (Amaliah et al., 2022). In this study, respondents were all medical record officers in Kuningan Regency, Indonesia, which 56 respondents. They were interviewed about their knowledge, attitudes, availability of PPE and tenure of work. Observation using a checklist to the used and compliance in using PPE.

The analysis was carried out using the chi-square test and logistic regression to find the determinants of the factors that influence the use of PPE during the pandemic of medical record officers in Kuningan Regency, Indonesia.

## 3. RESULTS AND DISCUSSION

### 3.1 Results

#### *Demographic characteristics of participants*

Based on the results of data collection regarding demographic characteristics, details can be seen in table 1 as follow:

**Table 1.** Demographic Characteristics

Demographic Characteristics	N (%)
Age	
21-25 Years	3 (5.4)
26-30 Years	29 (51.8)
31-35 Years	18 (32.1)
36-40 Years	4 (7.1)
41-45 Years	2 (3.6)
Sex	
Female	42 (75)
Male	14 (25)
Tenor of work	
≤ 5 Years	21 (37.5)
>5 Years	35 (62.5)
Educations	
Diploma III	46 (82.1)
Bachelor Degree	10 (17.9)

Based on the table 1, it can be seen that the most age characteristics are at the age of 26-30 years, which is 29 people (51.8%). For the gender the most were male as many as 42 people (75%). More working period > 5 years as many as 35 people (62.5%). The most educated people were diploma III as many as 46 people (82.1%).

#### *Bivariate Analysis*

Based on the results of the bivariate analysis, it was found that the variables associated with the use of PPE were knowledge (pvalue = 0.017), attitude (pvalue = 0.01), PPE availability (pvalue = 0.014). While the variable not related to the use of PPE was years of service (p-value = 0.730). Detail can be seen in table 2 as follow:

**Table 2.** Bivariate Analysis

Variable	Use of PPE		P value
	Not use PPE	Use PPE	
<b>Education</b>			
Enough	17 (68%)	8 (32%)	0.017
Good	10 (32.3%)	21 (67.7%)	
<b>Attitude</b>			
Enough	21 (77.8%)	6 (22.2%)	0.001
Good	6 (20.7%)	23 (79.3%)	
<b>Tenor of work</b>			
≤ 5 Years	9 (42.9%)	12 (57.1%)	0.730
>5 Years	18 (51.4%)	17 (48.6%)	
<b>PPE availability</b>			
Not availability	20 (64.5%)	11 (35.5%)	0.014
Availability	7 (28%)	18 (72%)	

Sig = p <0.05

### **Multivariate**

Based on the results of research using logistic regression analysis, it is known that knowledge and attitude are determinant factors related to the use of Personal Protective Equipment at medical record officers in Kuningan Regency. Detail can be seen in table 3 as follow:

**Table 3.** Multivariate Analysis

Variabel	OR	95%CI	P Value
Education	8.878	1.710-46.101	0.009
Attitude	22.529	4.369-116.179	0.000
PPE availability	2.624	0.594-11.601	0.203

Knowledge concludes that there is a significant relationship between knowledge and the use of PPE with p-value = 0.019 with OR = 8.878 (CI = 1.710-46.101), which means that respondents who have good knowledge have a potential of 8.878 times greater to use PPE

Attitude is also a determinant factor related to the use of PPE with pvalue = <0.001 with OR = 22.529 (CI = 4.369-116.179) which means that respondents who have good attitudes have 22.529 times greater potential to use PPE compared to respondents who have sufficient attitudes.

The availability of PPE does not have a significant relationship with the use of PPE, this is indicated by the p-value = 0.203 with a OR value = 2.624, which means that respondents who do not have the availability of PPE are 2.624 times more likely to not use PPE compared to respondents whose instances have the availability of PPE.

## **3.2 Discussion**

### **Education**

A higher level of knowledge about PPE is expected to have behavior when using PPE (Hassan et al., 2022). The high level of respondents' knowledge about PPE is in line with the behavior of using PPE, which shows that the respondent knows that apart from knowing also applies it in their daily work. The domain of knowledge starts from knowing the domain application (Grant & Baden-Fuller, 2004), the domain knowing only about the principles of PPE but not necessarily applying it to work (De Camargo, 2022; Istriningsih et al., 2022). Besides that, behavior is influenced not only by knowledge (predisposing factors) but also by supporting factors and driving factors.

Supporting factors include the availability of PPE equipment at the place of practice can influence the behavior of using PPE among respondents (Tamene et al., 2022). Driving factors influencing the behavior of using PPE on respondents include human resources who interact directly with respondents. In this study, the supervisors of medical record officers and other health workers, such as nurses, can supervise the use of respondents' PPE.

### **Attitude**

The majority of respondents have a positive attitude toward the use of PPE. With this positive attitude, using personal protective equipment will be good in the future. However, the attitude of good results is not necessarily accompanied by good results because the attitude is not an action or activity. However, attitude is a predisposition to the action of behavior.

Attitude contains three components, including the cognitive component, namely components related to knowledge, views, beliefs, perceptions or opinions and beliefs (Hidayat & Perdana, 2021; Klop & Severiens, 2007). The affective component is a component related to feeling happy or unhappy with

the object of the attitude (Conly et al., 2020; Fatimah et al., 2022). The conative component is a component related to the tendency to act or behave towards the object of attitude.

#### **PPE availability**

The availability of PPE is a supporting factor in compliance with using PPE to prevent work accidents and work risks that occur in the workplace (Gershon et al., 2000; T. K. M. Wong et al., 2020). If the workplace does not provide PPE, it means that the workplace has endangered its workers from the risk of work accidents that could arise in the workplace. So the workplace must provide PPE according to the risks of the job because workers are an asset.

#### **4. CONCLUSION**

Knowledge and attitude are determinants related to the use of PPE in medical record officers. Although most of the respondents have good knowledge and attitudes, there are still many respondents who do not use Personal Protective Equipment.

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