

THE USE OF PERSONAL PROTECTIVE EQUIPMENT BY PHARMACISTS AND RADIOGRAPHERS DURING THE COVID-19 PANDEMIC IN KENDAL DISTRICT

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Submitted: Mar 27th 2024 Revised: Mar 29th 2024 Accepted: Jun 26th 2024 Published: Jul 3rd 2024

ABSTRACT

In order to control the transmission of covid-19 which entered Indonesia in early 2020, the government implemented health protocol regulations. Apart from health protocols, one of the steps that health workers can implement to control the transmission of covid-19 when providing services during the pandemic is to use personal protective equipment while working. This is the background for the author to study further in research that aims to determine the use of personal protective equipment used by pharmacists and radiographers during the covid-19 pandemic while in service in Kendal District. The research method used was descriptive qualitative by giving questionnaires electronically using google form to research respondents. The research results obtained include, the majority of respondents were female with a percentage of 62%, the health workers who participated as research respondents consisted of 38% pharmacists and 62% radiographers. The use of personal protective equipment used by pharmacists during the covid-19 pandemic includes masks and gloves which are adjusted to the risks of the work activities carried out. The use of personal protective equipment used by radiographers during the covid-19 pandemic includes wearing work clothes according to hospital regulations, surgical isolation gowns, N95 respirators, eye protection, medical gloves, closed shoes, face shields when carrying out medical interventions and tools additional personal protection according to the risks of the work activities carried out. So, it can be concluded that the personal protective equipment used by pharmacists and radiographers in Kendal District while on duty during the covid-19 pandemic has met the elements of compliance requirements in efforts to control the transmission of covid-19, such as the use of personal protective equipment based on indications for their use by considering the risk of exposure and possible transmission dynamics. By implementing appropriate personal protective equipment when working, it is hoped that pharmacists and radiographers in Kendal District can be protected from transmission of covid-19.

Keywords: personal protective equipment, pharmacist, radiographer.

BACKGROUND

The term coronavirus disease 2019 or more commonly known and referred to as covid-19 was first announced by the World Health Organization on February 11 2020 (WHO, 2020c). Covid-19 initially appeared in Wuhan City, Hubei Province, China in December 2019. Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) is the cause of covid-19 and is the agent that causes the deadly disease (Rothan and Byrareddy, 2020; Susilo *et al.*, 2020). The spread of covid-19 is a major concern for global public health (Rothan and Byrareddy, 2020). The World Health Organization determined the status of covid-19 to be a pandemic on March 12 2020. Before determining this pandemic status, two reasons were considered, the first reason was because of the scale and speed of transmission of covid-19, the second reason was because there were several countries that did not respond to the threat of covid-19 (WHO, 2020d). Covid-19 has quickly spread throughout the world, infecting many people (Olivia, Gibson and Nasrudin, 2020). The ongoing covid-19 pandemic is putting the public health system under terrible strain (WHO, 2020a). The rapidly growing spread of covid-19 needs to be stopped with early diagnosis and isolation to achieve disease control (Amélia Estevão, 2020).

To prevent the spread of covid-19, it needs to be supported by increasing knowledge, understanding and awareness of the covid-19 vaccine (Mahendra and Fitriah, 2021). Prevention of the spread of covid-19 also needs to be supported by awareness in implementing health protocols, increasing knowledge of the effectiveness of the covid-19 vaccine and increasing covid-19 vaccination (Utami, Sulistyowati and Jamil, 2023). A high level of knowledge and a positive attitude towards the use of personal protective equipment are also needed for work safety during covid-19 (Suryani *et al.*, 2022). Apart from that, efforts to control the transmission of covid-19 need to be carried out by carrying out technical procedures in health services in the work environment and using appropriate personal protective

equipment (Utami and Sulistyowati, 2022). In health service facilities, control over the transmission of covid-19 is needed, comprehensive control activities are needed on various aspects, taking into account technical control, administrative control and the use of personal protective equipment (Sulistomo et al., 2020). Implementing personal self-protection in an effort to prevent the spread of covid-19 can be done by measuring body temperature, using a mask, washing hands and using hand sanitizer (Sari, Ardy and Kusumawardhani, 2023).

Personal protective equipment is special clothing or equipment worn by officers to protect themselves from dangers in the work environment (Sulistomo et al., 2020). The use of personal protective equipment is considered to have a positive and significant influence on the occupational safety and health of medical personnel (Daeli *et al.*, 2024). Therefore, there needs to be a balance between knowledge, attitudes and availability of personal protective equipment with compliance with the use of personal protective equipment (Prarona, Sutinbuk and Edi, 2024). As an effort to prevent and control infection in the management of covid-19 patients, the use of personal protective equipment is required (WHO, 2020b). So there is a need for standard operational procedures, availability of posters, training, providing explanations and understanding regarding the use and removal of covid-19 personal protective equipment (Hermawan, Heru and Hidayat, 2024). The World Health Organization recommends personal protective equipment for treating covid-19 patients using contact and droplet prevention measures (WHO, 2020b).

Health workers who are on the front line have a significant risk of being infected with covid-19 when providing services to covid-19 patients. Officers in pharmaceutical services use personal protective equipment. The personal protective equipment is divided into two, including for pharmacy officers who work in the covid-19 isolation room and officers who do not have direct contact with covid-19 patients. For officers in the covid-19 isolation room, the use of personal protective equipment follows the standards in the isolation room plus personal protective equipment that adapts to the risks of the activities carried out. Meanwhile, for officers who do not have direct contact with covid-19 patients, the personal protective equipment used is adjusted to the needs of routine activities with the addition of using surgical masks or other masks and using gloves according to the risks of the activity being carried out (Sulistomo et al., 2020).

Meanwhile, officers in radiology services use personal protective equipment which is divided into two parts, namely the use of personal protective equipment when carrying out radiological examinations in the isolation room and the use of personal protective equipment when carrying out radiological examinations in a radiology installation in accordance with their respective professions, including for radiographers, electromedics and cleaners. Radiographers who are carrying out radiological examinations in the isolation room use personal protective equipment that adapts to isolation room standards plus personal protective equipment that adjusts to the risks of work activities. Meanwhile, radiographers who come into contact with covid-19 patients in the radiology room wear work clothes that comply with hospital regulations, surgical isolation gowns, N95 respirators, eye protection, medical gloves, closed shoes, face shields when carrying out medical interventions and personal protective equipment that adapts to the risks of the work activities carried out. Electromedical personnel use personal protective equipment that adapts to work activities and can work after the equipment and room have been disinfected after each use to examine covid-19 patients. Finally, the cleaning staffs in the radiology room wear work clothes that comply with hospital regulations, surgical isolation gowns, N95 respirators, eye protection, medical gloves, closed shoes and eye protection when carrying out medical interventions (Sulistomo et al., 2020).

The background that has been presented is the basis for the author to study further in research related to the use of personal protective equipment used during the covid-19 pandemic. The aim of the research was to determine the use of personal protective equipment used by pharmacists and radiographers in Kendal District during the covid-19 pandemic while in service.

METHOD

The research carried out was descriptive qualitative research used to find out what personal protective equipment was used by pharmacists and radiographers when working during the covid-19 pandemic in Kendal District. The ethical principles in this research refer to regulations (Komisi Etik Penelitian dan Pengembangan Kesehatan Nasional and Indonesia, 2017) including paying attention to respect, kindness, justice, culture, norms, safety and welfare of research participants which are in line with the rules of science and research for individuals. and the community where this research was conducted. The research was conducted by applying inclusion criteria in the form of respondents being pharmacists and radiographers who work in Kendal District, respondents worked in health facilities during the covid-19 pandemic and respondents were willing to contribute to the research. Respondents in the study came from 4 health facilities in Kendal District with a total of 8 respondents consisting of male and female. The research was carried out by administering an electronic questionnaire in the form of a google form to research respondents with a total of 4 questions. Then the results of the respondents' answers are analyzed so that conclusions can be drawn.

Table 1. Electronic questionnaire consisting of a list of research questions given to respondents in the form of a google form.

Table 1. List of Research Questions

No	Research Question
1	Do you know about the regulations for using personal protective equipment in services during the covid-19 pandemic?
2	Is there a difference in the use of personal protective equipment when working with covid-19 patients and non covid-19 patients?
3	What personal protective equipment do you use as a pharmacist or radiographer during the covid-19 pandemic?
4	If you still have something to say about the last question regarding the use of personal protective equipment during the covid-19 pandemic, please fill it in. But if not, then just leave it blank.

RESULT AND DISCUSSION

Based on the results of the research questionnaire given to respondents, the following research results were obtained:

Based on table 2, it can be concluded that some of the respondents in this study were female with a percentage of 62% with a total of 8 participating respondents coming from 4 health facilities.

Table 2. Gender of Research Respondents

Gender	Percentage
Male	38%
Female	62%
Total	100%

Based on table 3, it can be concluded that the health workers who participated as respondents in the research consisted of pharmacists at 38% and radiographers at 62%.

Table 3. Research Respondents' Profession

Profession	Percentage
Pharmacists	38%
Radiographers	62%
Total	100%

Based on the results of the research questionnaire given to pharmacists, all respondents knew about the regulations for using personal protective equipment when on service during the covid-19 pandemic. All respondents stated that there were differences in the use of personal protective equipment used at work when treating covid-19 patients and those who did not. Respondents were of the opinion that the use of personal protective equipment used by pharmacists was generally masks and gloves which were adjusted to the risks of the work activities carried out.

This is in accordance with opinions in the literature (Sulistomo et al., 2020), who provided a statement regarding the use of personal protective equipment by pharmacists who are working in the covid-19 isolation room using personal protective equipment that follows the standards in the isolation room plus personal protective equipment that adapts to the risks of the activity being carried out. Meanwhile, for pharmacists who do not have direct contact with covid-19 patients, the personal protective equipment used can be adjusted to the needs of routine activities by additionally using surgical masks or other masks and using gloves according to the risk of the activity being carried out.

Table 4. Pharmacist Questionnaire Results

No	Research Question	Respondent's Answer (Pharmacist)
1	Do you know about the regulations for using personal protective equipment in services during the covid-19 pandemic?	Yes.
2	Is there a difference in the use of personal protective equipment when working with covid-19 patients and non covid-19 patients?	Yes.
3	What personal protective equipment do you use as a pharmacist during the covid-19 pandemic?	Surgical masks or other masks according to the risk analysis of work activities. Gloves according to the risk analysis of work activities.
4	If you still have something to say about the last question regarding the use of personal protective equipment during the covid-19 pandemic, please fill it in. But if not, then just leave it blank.	-

Based on the results of the research questionnaire given to radiographers, all respondents knew about the regulations for using personal protective equipment when in service during the covid-19 pandemic. All respondents stated that there were differences in the use of personal protective equipment when working with covid-19 patients and when working with patients who were not affected by covid-19. Respondents provided opinions regarding the use of personal protective equipment by radiographers during the covid-19 pandemic, including wearing work clothes that comply with hospital regulations, surgical isolation gowns, N95 respirators, eye protection, medical gloves, closed shoes, face shields if necessary, carry out medical interventions and additional personal protective equipment in accordance with the risks of the work activities carried out.

This is in accordance with opinions in the literature (Sulistomo et al., 2020), which provides a statement regarding the use of personal protective equipment by radiographers who are carrying out radiological examinations in isolation rooms using personal protective equipment that adapts to isolation room standards plus personal protective equipment that adapts to the risks of work activities. Meanwhile, radiographers who are involved in contact with covid-19 patients in the radiology room wear work clothes that comply with hospital regulations, surgical isolation gowns, N95 respirators, eye protection, medical gloves, closed shoes, face shields when carrying out medical interventions and personal protective equipment that adapts to the risks of the work activities carried out.

Table 5. Radiographer Questionnaire Results

No	Research Question	Respondent's Answer (Radiographer)
1	Do you know about the regulations for using personal protective equipment in services during the covid-19 pandemic?	Yes.
2	Is there a difference in the use of personal protective equipment when working with covid-19 patients and non covid-19 patients?	Yes.
3	What personal protective equipment do you use as a radiographer during the covid-19 pandemic?	Wear work clothes according to hospital regulations, surgical isolation gown, N95 respirator, eye protection, medical gloves, closed shoes, face shield (if carrying out interventional medical procedures) and additional personal protective equipment in accordance with the risk analysis of the activity being carried out.

- 4 If you still have something to say about the last question - regarding the use of personal protective equipment during the covid-19 pandemic, please fill it in. But if not, then just leave it blank.
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CONCLUSION AND SUGGESTIONS

The personal protective equipment used by pharmacists and radiographers while on duty during the covid-19 pandemic in Kendal District has met the elements of compliance requirements in efforts to control the transmission of covid-19, such as the use of personal protective equipment based on indications for use, taking into account the risk of exposure and transmission dynamics that may occur. By implementing appropriate personal protective equipment when working, it is hoped that pharmacists and radiographers in Kendal District can be protected from transmission of covid-19.

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