



**COVID-19 EXPOSURE RISK TO NURSES FROM COVID-19 PATIENTS:
A DESCRIPTIVE STUDY**

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ABSTRACT

Coronaviruses are a large family of viruses that cause illness ranging from mild to severe symptoms. The data on nurses who were infected with COVID-19 in the Camar room of the Dadi Hospital, South Sulawesi Province, Makassar City were 13 nurses. Objective: This study aims to describe the risk of exposure to the COVID-19 virus on nurses in the Camar Room at the Dadi Hospital, South Sulawesi Province, Makassar City. This type of research is descriptive research. The sample of this research is nurses who treat COVID-19 patients as many as 51 respondents using the total sampling technique. Based on a Nurse care activities have a very high risk of being exposed to COVID-19 as many as 51 respondents (100.0%), based on biological material accidents of nurses who do not experienced a biological material accident with a low risk of being exposed to COVID-19 as many as 45 respondents (88.2%) and those who experienced a high risk of exposure to biological material accidents as many as 6 respondents (11.8%) and based on bedience in carrying out the IPC, nurses who obedient the IPC at low risk of exposure to COVID-19 as many as 38 respondents (74.5%) and nurses who disobedient with the IPC at high risk of exposure to COVID-19 as many as 13 respondents (22.5 %). The conclusions of the study are those who have a high risk of being exposed to COVID-19 are respondents who carry out activities to care for COVID-19 patients and those who are at low risk of being exposed to COVID-19 are respondents who have not experienced biological material accidents as well as respondents who are bedient in carrying out IPC procedures.

Keywords: COVID-19 exposure risk; COVID-19 patients; nurses

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INTRODUCTION

Coronaviruses are a large family of viruses that cause illness ranging from mild to severe symptoms. There are two types of coronavirus that are known to cause diseases that can cause severe symptoms, such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). Coronavirus Disease 2019 (COVID-19) is a new type that has never been previously identified in humans (WHO, 2020). At the beginning of 2020, the emergence of a disease that is endemic throughout the world with the name of the Severe Acute Respiratory Syndrome coronavirus-2 (SARS-CoV2) virus. This virus was first reported at the end of 2019 in the city of Wuhan, Hubei Province in China, the characteristics of this virus are similar to viral pneumonia. In early 2020, the World Health Organization (WHO) officially named this virus as COVID-19. While the International Committee for Taxonomy of viruses named this virus as Severe Acute Syndrome Coronavirus-2 (SARS- COV2) (Wang, et al, 2020).

World Health Organization (WHO, 2021), Globally, it is estimated that on February 6, 2021, the number of positive cases is 105,251,877 people, 58,566,864 people have recovered and 2,297,413 people have died. Until now, the number of cases is still increasing every day. On February 6, 2021, the United States ranked first with 27,391,589 positive cases, 17,132,075 recovered and 470,310 deaths. India ranked second with 10,815,222 positive cases, 10,509,790 recovered and 154,956 people died and Brazil ranked third with 9,447,165 positive cases, 8,326,798 recovered and 230,034 people died from 221 countries. For Indonesia, it is ranked 19th with the number of positive cases reaching 1,147,010 people, 939,184 people recovered and 31,393 people died. The Indonesian Ministry of Health (Kemenkes RI, 2021), the prevalence of COVID-19 in Indonesia on February 6, 2021, especially in South Sulawesi Province was in fifth place out of 34 provinces with 49,692 positive cases, 44,631 people recovered and 755 people died. Until now cases are still increasing every day.

Common signs and symptoms of COVID-19 infection include acute respiratory disorders such as fever, cough, flu and shortness of breath. The average incubation period is 5-6 days with the longest incubation period being 14 days. In severe cases of COVID-19 it can cause pneumonia, acute respiratory syndrome, kidney failure and even death (Kemenkes, 2020). A nurse is someone who has graduated from higher education in the field of nursing, both domestically and abroad who has been recognized by the government in accordance with the provisions of the legislation and can play a role as a provider of nursing care to individuals, families and groups both in health and illness. (Ministry of Health, 2017).

Risk factors for COVID-19 exposure to nurses are the lack of availability of personal protective equipment (PPE), inappropriate use of PPE or lack of knowledge in using PPE, older age, fatigue at work and dishonesty of patients (Julia, et al, 2020). According to the general chairman of the DPP of the Indonesian National Nurses Association (PPNI), Fadhilah on February 5, 2021, said that 234 nurses in Indonesia died due to COVID-19. Not only that, PPNI also noted that there were more than 5,000 people infected with the virus (Rahajen, 2021). RSKD Dadi, South Sulawesi Province, Makassar City was designated as one of the referral hospitals for handling COVID-19. On July 18, 2020, treated 779 COVID-19 patients and around 300 people have recovered, while 58 people have died (Darwin, 2020).

According to research from (Boqi, et al, 2020), said that in China and Italy the majority of health workers were at higher risk of being exposed to COVID-19 because they were in close contact with patients. In February 2020 a total of 1,716 health workers were infected and 5 people died (0.3%). In March 2020, 4,826 health workers were infected with COVID-19 (9% of confirmed cases) and 18 people died. Therefore medical facilities to protect health care workers. According to research from (Xioquan, et al, 2020), said that most have a risk of infection including health workers who work to treat patients with COVID-19 disease, overall as many as 110 of 9684 health workers at Tongji Hospital tested positive for COVID-19 with higher infection rates, especially in those younger than 45 years. Most health workers with COVID-19 had nonsevere disease with a prevalence of 0.9% asymptomatic carriers and a mortality rate of 0.1%. Seeing the large number of deaths of health workers due to exposure to the corona virus, researchers are interested in conducting research related to the description of the risk of exposure to COVID-19 in nurses at Dadi Hospital, South Sulawesi Province, Makassar City

METHOD

This type of research is descriptive research. The sample of this research is nurses who treat COVID-19 patients as many as 51 respondents using the total sampling technique. The questionnaire used as an instrument was adopted from Risk Assessment And Management Of Exposure Of Health Care Worker In Contextof Covid-19: Interim Guidance by WHO.

RESULTS

This research was conducted in the Camar Room of the Dadi Hospital, South Sulawesi Province, Makassar City on November 27, 2020 to December 11, 2020. The type of research used in this study was a descriptive study with the aim of knowing the risk description of COVID-19 exposure to nursesat Dadi Hospital in Sulawesi Province. South of Makassar City. Data obtained from the results of direct interviews from researchers to nurses on duty in a special room for treating COVID-19 patientsbased on a questionnaire containing questions about the risk of exposure to COVID-19 in nurses.Thisresearch has 51 respondents, where nurses provide direct care to COVID-19 patients. The dataobtained are then presented in tabular form with an explanation of the frequency distribution of these data. The results of the research that has been carried out can be seen in the following description.

Table 1.
Respondent characteristics (n= 51)

Respondent characteristics	f	%
Age		
Late teens (17-25)	23	45.1
Early adulthood (26-35)	24	47.1
Late adulthood (36-45)	4	7.8
Gender		
Male	20	39.2
Femae	31	60.8
Education degree		
D3	16	68.6
S1 and Nurse	35	31.4

The results of the study showed that the number of nurses at Dadi Hospital, South Sulawesi Province, Makassar City was 51 people. Based on the results from table 1, the data on the characteristics of the highest age group are nurses aged 26-35 years as many as 24 people (47.1%) and the lowest age group is nurses aged 36-45 years as many as 4 people (7.8%).Characteristics of the highest gender group were female as many as 31 people (60.8%) and the lowest gender group was male as many as 20 people (39.2%). Characteristics of the Education groupthe highest education group is nurses as many as 35 people (68.6%) and the lowest education group is with D3 education as many as 16 people (31.4%).

Table 2.
COVID-19 Exposure Risk (n= 51)

	f	%
Nursing Care Activity		
Hight risk	51	100.0
No risk	0	0
Biological Material		
Accident		
Accident	6	11.8
No Accident	45	88.2
Obedience Implement IPC		
Procedure		
Obedient	38	74.5
Disobesient	13	25.5

Based on table 2, the results of the study showed that the number of nurses at Dadi Hospital, South Sulawesi Province, Makassar City was 51 people. The results obtained from frequency distribution data based on COVID-19 patient care activities show that nurses who carry out activities have a high risk of being exposed to COVID-19 with a presentation of 51 people (100.0%). The results obtained from frequency distribution data based on accidents with biological materials during interaction with COVID-19 patients, with the highest results being nurses who did not have accidents who had a low risk of being exposed to COVID-19 with the results obtained as many as 45 people (88.2%) and The lowest was that nurses who had accidents had a high risk of being exposed to COVID-19 with the results obtained as many as 6 people (11.8%). The results obtained from frequency distribution data based on obedience to carry out the IPC procedure with the highest results being obedient nurses who had a low risk of being exposed to COVID-19 as many as 38 people (74.5%) and the lowest results were nurses who were disobedient. have a high risk of being exposed to COVID-19 as many as 13 people (25.5%).

DISCUSSION

The results of the study showed that the number of nurses at Dadi Hospital, South Sulawesi Province, Makassar City was 51 people. Based on the results of data from the characteristics of the age group, the highest score is aged 26-35 years and the age group with the lowest result is aged 36- 45 years. For research results pthere are gender group characteristics, the highest score is female and the lowest is male. As for the results of research on the characteristics of the education group, the highest education result is Nurses and the lowest education result is D3. Based onThe results from the frequency distribution data of care activities in COVID-19 patients show that nurses who carry out activities have a high risk of being exposed to COVID-19. Due to the high level of care activities such as providing direct care, having face-to-face contact within 1 meter and being present when aerosol procedures are carried out by nurses in the Camar room at Dadi Hospital, South Sulawesi Province.

According to research from Xioquan, et al, (2020), most of the health workers have a high risk of infection due to the high level of activity in caring for COVID-19 patients or having direct contact to treat COVID-19 patients, with a total of 110 out of 9684 health workers in Indonesia. Tongji hospital tested positive for COVID-19 with a higher infection rate especially those younger than 45 years. In this study it was found that the research conducted by Xioquan, ddk, (2020) is in line with the research conducted by the researcher.

Where the activity of treating COVID-19 patients has a higher level of exposure.

Results from frequency distribution data based on accidents with biological materials during interactions with COVID-19 patients. Shows that nurses who do not have accidents have a low risk of exposure to COVID-19 and nurses who have accidents have a high risk of exposure to COVID-19. According to Mary, et al, (2020), health workers are faced with a high risk of being exposed to SARS-CoV-2 because of the clinical procedures they perform on COVID-19 patients. In this study a sample of 408 health workers, only 14.0% of health workers who have a high risk of exposure to COVID-19 or no accidents occur during the procedure. Health care workers who performed or were present during the aerosol procedure (AGP) were 23.8% or an accident occurred during the procedure was more likely to be exposed than health workers who did not perform or were not present during the AGP (AOR 23.88; 95% CI: 18.45 , 39, 20) or no accident occurred during the procedure. In this study it has been found that this study is comparable to the research conducted by Mary, et al, (2020). Based on the results of the frequency distribution data based on compliance and obedience in carrying out IPC procedures, showed the highest results were obedient and obedient nurses who had a low risk of exposure, while for the lowest results were non-compliant and obedient nurses who had a high risk of exposure.

According to Binh, et al, (2020), said that of 5,209 health workers from 15 hospitals and health centers in Vietnam, where higher health workers had good adherence and adherence to carry out IPC procedures. The results obtained were: HL(B=0.13, 95% CI 0.10-0.15 P<0.001), and Ehealth (B=0.22, 95% CI 0.19-0.26 P<0.001). According to research from Venalisa, et al, (2019), compliance and obedience in using PPE really serves to protect the body from danger when an accident occurs and can reduce the low risk of transmission to nurses. Of the most obedient nurses in using PPE as recommended and there are still a small proportion who have not complied with the use of PPE, where the compliance of nurses in the use of PPE is (88.1%) while for nurses who are not obedient in the use of PPE are (11.9 %). In this study, it was found that research from Binh, et al, (2020) and Venalisa, et al, (2020) said that health workers had good adherence and obedience in carrying out IPC procedures, where this research is in line with research that has been carried out by researchers.

CONCLUSION

Based on the results of research conducted at the Dadi Hospital, South Sulawesi Province, Makassar City regarding the risk of exposure to COVID-19 in nurses, it can be concluded that: Based on care activities for COVID-19 patients, nurses who carry out activities due to direct contact with patients have a high risk of being exposed to the COVID-19 virus. Based on accidents with biological materials during interactions with COVID-19 patients, nurses who do not have accidents have a low risk of exposure to COVID-19. Based on compliance and adherence to the IPC procedure, obedient nurses have a low risk of being exposed to the COVID-19 virus in the rules for using PPE that have been determined

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