Patterns of Using Masks in Prevention of Covid-19 Transmission in Makassar, Indonesia

M. Askar[1]*, Ernawati[2], Wa Mina La Isa[3], Muhammad Nur[4]
[1]Medical Laboratory Technology Department, Health Polytechnic of Makassar, Indonesia
[2, 3]Nursing Department, Institute of Health Science Nani Hasanuddin, Indonesia
*askar@poltekkes-mks.ac.id

ABSTRACT

The case of Covid-19 infection rate in Makassar, Indonesia is still high. Recently, the government is still implementing community activity restriction to reduce the rate of the pandemic. However, this is not enough, the policy needs to be accompanied by increasing the effectiveness of other intervention measures, including masks. This study aims to provide an overview of the behavioral pattern of using masks in the public area in Makassar. The results of this study are expected to be used as basic data in taking appropriate steps in increasing efforts to prevent the transmission of Covid-19 in Makassar. The results of the study showed that public awareness in using masks is quite high, the motivation to use masks mostly comes from intrinsic motivation, and dominantly of the subject has been able to adapt to the behavior of wearing masks. However, some behaviors of wearing masks still need to be improved with health education, including frequently put on and take off behavior when using masks, the length of time using masks replacing with new or clean ones, management of masks that have been used so those masks are disposed of in a closed container as much as possible. To maintain the behavior of wearing masks in the public, it is necessary to conduct further research on the proper technique of wearing masks to reduce the feeling of shortness of breath and discomfort that mask users complain about and the prevention of condensation on glasses users when wearing masks.

Keywords: using masks, public behavior, prevention of Covid-19

INTRODUCTION

Makassar is the fourth largest city in Indonesia. The Covid-19 pandemic in Makassar City has been going on since March 2020 (Sulselprov.go.id). Data on Covid-19 cases in Makassar in August 2021 showed the number of confirmed positive cases reached 47,000 people (3.3%) of the total population of 1,423,877 people. Meanwhile, for South Sulawesi Province, where Makassar is the provincial capital, the number of confirmed positive cases has reached more than 103,000 people (Makassar, 2021). One of the factors inducing the high incidence of Covid-19 in Makassar is the lack of community compliance with the regulation, especially in the use of masks as an effort to prevent the transmission of Covid-19. (Alam, 2020).

The use of masks in the community in a meta-analysis study was more effective than just washing hands, and doing both together provided better protection. (MacIntyre & Chughtai, 2020). One of the main problems in the current use of masks in facing the Covid-19 pandemic is the absence of uniform recommendations in the use of masks that are guided by the community together. This of course has an impact on accelerating the decrease in transmission through preventive measures because the behavior of wearing masks has not been properly regulated.

Currently, there are many types of masks on the market. The determination of the types of masks also differs from one literature to another, but at least in this study, the types of masks are classified into three main types, namely cloth masks, surgical masks, and respirator masks. It is easier to classify them by reducing the six types of masks that had been used and grouped before. (De Silva, Niriella, & de Silva, 2021).

41

People's behavior in the use of masks currently shows various patterns. Research in Palembang on community compliance in using masks showed that 21.0% of people showed low compliance in using masks and 32.0% of people expressed discomfort in using masks. (Ghiffari & Ridwan, 2020).

Observations made by researchers directly in Makassar of community behavior in wearing masks, it appears that most of the people outside their homes have used masks, but some of them put masks in inappropriate positions. The masks used are attached but do not cover the nose and only cover the mouth and some even pull the mask up to the chin so that it does not cover both the mouth and nose. This shows that not all people have full awareness of the importance of masks in preventing Covid-19.

This study aims to obtain an overview of community behavior patterns in Makassar especially in using masks in preventing Covid-19 infection. This research is expected to provide the necessary description of this behavior. The use of masks as a key point in preventing the transmission of Covid-19 can be optimized to slow down the rate of the Covid-19 pandemic in Makassar.

MATERIAL AND METHOD

This type of research is a descriptive study aimed to explore an overview of the behavior patterns of the Makassar community in using face masks due to pandemic Covid-19. This type of research is a descriptive study aimed to explore an overview of the behavior patterns of the Makassar community in using face masks due to pandemic Covid-19. The sample in this study was part of the population who were willing to participate in the study with a minimum age of the research subject 15 years and having a gadget or mobile phone. This limitation was because

this research instrument was sent using the WhatsApp social media application. After all, at the time the research was conducted, Makassar Government applied the rules for the Imposition of Restrictions on Community Activities by the Mayor of Makassar. The rule required the research could not be carried out directly by direct meeting with the research subject. The sampling technique used was snowball sampling from one subject send a link to another that meets the criteria, such as the age limit, and also the subject living in Makassar.

The collected data was then processed using SPSS for Windows software to obtain data on the frequency distribution of respondents' characteristics and research variables. The variables in this study consisted of 10 variables, respectively: the type of mask used, the environment in which to wear the mask, the intensity of using the mask outside the home, the duration (duration) of wearing the mask outside the home, managing the mask after use, the behavior of wearing a mask outside the home, motivation in using masks, barriers to using masks, availability of masks, and attitudes towards wearing masks.

The research instrument used a questionnaire consisting of two parts. The first part asks about the characteristics of respondents including gender, age, and education level. The second part asks 10 research variables by providing four alternative answer choices and one other option that allows research subjects to add their answers if they do not match the available answer choices. At the beginning of the questionnaire, the researcher gave informed consent regarding this study so that only subjects who agreed to participate in this study could continue to answer the research questionnaire.

42

RESULT AND DISCUSSION

This study was followed by 114 research subjects who participated by filling out a complete questionnaire. The characteristics of the subjects of this study were seen from the data obtained by males as many as 17 people (14.9%) and women as many as 97 people (85.1%). The characteristics of the research subjects seen from the age category obtained data as many as 33 people (28.9%) were in the <20 years age group, 57 people (50.0%) were in the 20-29 year age group, 16 people (14.0%) were in the age group of 30-39 years, and 8 people (7.0%) were in the age group of 40-49 years. Meanwhile, when viewed from the education level of the research subjects, most of them had a high school education level of 69 people (60.5%), followed by a subject with a higher education level of 44 people (38.6%), and a junior high school education level of 1 person. (0.9%).

The results of this study reveal the types of masks that are generally used by research subjects in Makassar City. Of the 114 research subjects, 87 people (76.3%) used ordinary disposable surgical masks, 16 (14.0%) used N99/N95 masks, each 4 (3.5%) used cloth masks. which can be washed again with 1 layer or 2 layers of cloth and the same amount uses a cloth mask that can be washed with 3 layers of cloth. There are 2 people (1.8%) who use surgical masks that can be washed again, and 1 person (0.9%) who uses KF94 masks.

This shows that most of the research subjects used disposable surgical masks. Surgical masks or medical masks are generally three-layer masks. The outermost layer is a waterproof layer, a filter layer in the middle, and an absorbent layer on the inside. (Centre for Health Protection, 2020). Surgical masks are designed to prevent infection from escaping, so they are suitable for use in

asymptomatic and symptomatic patients. (ECDC, 2020). It is very important to attach the colored part of the mask facing out or the mask will not work properly. Surgical masks when used to protect healthy people from infection are not as effective as disposable respirators. (Bach, 2017). Surgical masks are effective in preventing respiratory tract infections above 90%. (Atmojo, Iswahyuni, Rejo, & Setyorini, 2020). The respirator-type masks used by the subjects in this study were N99/N95 and KF94 masks which were used by 14.9% of the research subjects. N99/N95 and KF94 masks have higher effectiveness than disposable surgical masks and can even reach 99% effectiveness.

The use of masks in this study was seen from the environment of using masks, 99 people (86.8%) of the research subjects only used masks outside the home, while 8 people (7.0%) used masks both inside and outside the home. There were 7 people (6.1%) of the research subjects who only occasionally wore masks.

The results of this study indicate information related to the intensity of using masks outside the home in the community in Makassar City. Of the 114 research subjects, there were 94 people (82.5%) who always use masks outside the home, 14 people (12.3%) who sometimes use masks, 5 people (4.4%) who rarely use masks, and 1 person (0.9%) who never used a mask outside the house.

Judging from the duration of wearing masks when the research subjects were out of the house, out of 114 people, 57 people (50.0%) used masks for more than 4 hours to 8 hours every day. There were 26 people ((22.8%) who use masks for more than 2 hours to 4 hours every day. In addition, there were 23 people (20.2%) who use masks for more than 8 hours every day outside the house, 5 people (4.4%) who use masks less or equal

43

to 2 hours every day, and 3 people (2.6%) who use masks while outside the house.

In the Covid-19 Prevention and Control Guidelines (Runisa, 2020), Prevention that can be done against Covid-19 infection in the community related to the length of use of masks is to use cloth masks when leaving the house. Change the cloth mask after 4 hours of use, and wash it thoroughly after use. In the socialization material to traders at the Kupang City Market, Nusa Tenggara Timur Province (Sitompul, Wuri, Toha, & D.F.K.Foeh, 2021), It is recommended to change the mask every 4-6 hours of use. Thus, the behavior of using masks in the people of Makassar City where there are still 50% of research subjects still using masks from 4 to 8 hours every day even there are still 20.2% who use masks for more than 8 hours per day need to be given more education good for the rules of using masks.

In terms of the management of used masks or masks that have been worn, the results of this study indicate that the majority of the research subjects disposed of masks by putting them in closed containers as many as 64 people (56.1%), there were 41 people (36.0%) who disposed of masks in open trash cans, 5 people (4.4%) who re-washed their masks to use, and 4 people (3.5%) who disposed of their masks in any place.

This study also reveals obedience in wearing masks in the community of Makassar. The results showed 59 people (51.8%) who wore masks, usually put on and take off their masks as needed, 54 people (47.4%) who put their masks on continuously until it was time to take them off, and 1 person (0.9%)) who keeps the mask on and opens it only for eating and drinking.

This showed that not all people have complied with the use of masks because there were still 51.8% who wear masks with frequently put off and take off masks during

out of the home. This is in line with previous research (Alam, 2020) which states that public compliance in the use of masks in Makassar was not optimal. By using an unscrewed mask, the effectiveness of the mask in preventing infection can decrease. According to the Bulletin de l'Académie Nationale de Médecine ("Masks and COVID-19," 2020), before wearing a mask, hands should be washed with soap and water for at least 20 seconds or use an alcohol-based hand sanitizer with a minimum concentration of 60%. Tighten the ties behind the ears or head by not touching the front of the mask. When wearing a mask, one is not allowed to touch the mask or face. When removing the mask, remove the earloop first, do not touch the front of the mask or face. After removing the mask, wash your hands with soap and water for at least 20 seconds or use an alcohol-based hand sanitizer. This certainly needs to be an important concern, especially for people who use masks with the behavior of putting on and taking off masks frequently.

The motivation to use masks from research subjects also seems to vary. Of the 114 research subjects, 88 people (77.2%) had the motivation to prevent themselves from being exposed to Covid-19, 14 people (12.3%) admitted that the behavior of using masks was common before the Covid-19 outbreak. This is undeniable because Makassar City is one of the largest cities in Indonesia with a fairly dense and crowded population and has two seasons, namely the rainy season and the dry season. In the dry season, roads are generally very dusty, so most motorcyclists must wear masks or cloth covering the mouth and nose to reduce exposure to dust that can cause respiratory problems. In addition, 11 people (9.6%) stated that they were wearing masks because of external regulations from the government and the surrounding environment.

44

This is in line with research in Poland (Guzek, Skolmowska, & Głabska, 2020) who found that during the Covid-19 pandemic, adolescents stated that they used masks and gloves after the official government regulation that required people to cover their noses and mouths in public facilities, and found no difference between male and female gender in the use of masks. In addition, 1 person (0.9%) stated that he used a mask in addition to protecting himself from being exposed to Covid-19, as well as to prevent other people from being infected.

In terms of barriers to using masks, 52 research subjects (45.6%) revealed that they already felt comfortable using masks. Some of the problems faced in the use of masks, namely 37 people (32.5%) stated that they felt tight when using a mask, 23 people (20.2%) felt uncomfortable when using a mask, 1 person (0.9%) stated that sometimes it feels comfortable and sometimes it doesn't, as well as foggy or blurry glasses when wearing a mask. This is in line with research in Japan (Morishima, Mitsuno, & Kishida, 2017) which shows problems in wearing masks where most Japanese students who wear masks complain of the most common problems related to thermal, hygroscopic, and airflow properties. The perceived problems are humidity, difficulty breathing, fog over glasses, and loose make-up on women.

The availability of masks owned by research subjects obtained information that there were 97 people (85.1%) who stated that they had a lot of spare masks, 13 people (11.4%) stated that they provided masks by buying when they were going out of the house, 2 people each (1.8%) who have a mask because it was given by someone else and the same number do not have a spare mask.

Another element explored from this research was the subject's attitude towards the new behavior of using masks. From the results of the study, information was obtained that 93 people (81.6%) stated that they had been able to adapt to the behavior of wearing masks, 10 people (8.8%) who started to like the behavior of wearing masks, 9 people (7.9%) who were already happy to wear masks. masks, and there are only 2 people (1.8%) who do not like wearing masks.

The Covid-19 pandemic cannot be denied causing prolonged stress on society. Roy's nursing model theory, known as the "adaptation" model where Roy views every human being must have the potential to be able to adapt to stimuli both internal and external stimuli and this adaptability can be seen from various age levels (Pardede, 2018). It seems that the application of this theory can be seen from 81.6% of research subjects stating that they have been able to adapt to the behavior of wearing masks as an effort to reduce the stress they experience.

The weakness of this study is that the results of this study cannot be generalized to the entire population because this study does not reach people who do not have gadgets or mobile phones. After all, the questionnaire was only sent through the WhatsApp application. Thus, the results of this study only describe the pattern of mask use on research subjects taken from those who live in Makassar.

CONCLUSION

From the results of the research conducted, it can be concluded that the community of Makassar already has awareness in using masks with the types of masks used were mostly disposable surgical masks of 76.3%. People generally have used masks when leaving the house with a percentage of 86.8% although there were still people who only occasionally wore masks at 6.1%. When

outside the house, 82.5% of people always make sure their masks were installed.

Generally, the people of Makassar use masks between 4-8 hours a day by 50%. In terms of mask management, 56.1% of people were dominant in wasting masks in closed containers, although there were still 36.5% who threw them in open trash cans and 3.5% who threw masks in any place. The level of obedience in wearing masks while outside the home showed the behavior of frequently putting on and taking off masks by 51.8% and those who did not open the face mask by 47.4%.

Most of the motivation to use masks in Makassar Community has come from intrinsic motivation of 77.2% although there were still 9.6% who wear masks due to external motivational factors. Factors that can inhibit the behavior of using a mask to survive were 32.5% of research subjects who complain of shortness of breath when using a mask and 20.2% of research subjects who express feelings of discomfort.

However, from the aspect of the availability of masks, 85.1% of the research subjects had a spare mask at home and 81.6% of the research subjects also stated that they had been able to adapt to the behavior of wearing masks.

ACKNOWLEDGEMENT

CONFLICT OF INTEREST

There is no conflict of interest in this study. This research was carried out without the intention to promote any brand and there was no intention to provide benefits to certain parties. The cost of this research comes entirely from the researchers.

ETHICAL CLEARANCE

This study did not conduct experiments on humans and there was nothing personal or sensitive that could harm the research subjects. Before filling out the research instrument, the research subjects were given clear information on the aims and objectives of the study, the benefits of the research, and that this study did not collect the identity of the subject. Subjects were asked for consent in the research instrument before proceeding to fill out the questionnaire.

REFERENCES

Alam, A. S. L. S. (2020). Faktor yang mempengaruhi kepatuhan masyarakat terhadap penggunaan masker dalam Pencegahan Covid-19 di Kecamatan Biringkanaya Kota Makassar Tahun 2020. *Universitas Hasanuddin Fakultas Kesehatan Masyarakat Administrasi Kebijakan Kesehatan Makassar, Januari 2021*, *1*(Kepatuhan).

Atmojo, joko tri, Iswahyuni, S., Rejo, & Setyorini, C. (2020). Penggunaan Masker Dalam Pencegahan Dan Penanganan Covid-19. *Penggunaan Masker Dalam Pencegahan Dan Penanganan Covid-19: Rasionalitas, Efektivitas, Dan Isu Terkini*, *3*(2).

Bach, M. (2017). Understanding respiratory protection options in Healthcare: The Overlooked Elastomeric.

Centre for Health Protection. (2020). Infection Control branch: Use Mask Properly.

Department of Health.

De Silva, A. P., Niriella, M. A., & de Silva, H. J. (2021). Masks in COVID-19: let's unmask the evidence. *Expert Review of Respiratory Medicine*, *15*(3). https://doi.org/10.1080/17476348.2021.1 838277

ECDC. (2020). Infection prevention and control for COVID-19 in healthcare settings. *Elsevier's Novel Coronavirus Information Center*, (March).

Ghiffari, A., & Ridwan, H. (2020). Faktor-faktor yang Mempengaruhi Ketidakpatuhan Masyarakat Menggunakan Masker pada Saat Pandemi Covid-19 di Palembang. *Syedza Saintika*.

Guzek, D., Skolmowska, D., & Głabska, D. (2020). Analysis of gender-dependent personal protective behaviors in a national sample: Polish adolescents' covid-19 experience (place-19) study. *International Journal of Environmental Research and Public Health*, *17*(16). https://doi.org/10.3390/ijerph17165770

MacIntyre, C. R., & Chughtai, A. A. (2020). A rapid systematic review of the efficacy of face masks and respirators against coronaviruses and other respiratory transmissible viruses for the community, healthcare workers, and sick patients. *International Journal of Nursing Studies*, *108*. https://doi.org/10.1016/j.ijnurstu.2020.10 3629

Makassar, P. (2021). Info Penanggulangan Covid-19 Kota Makassar. Retrieved from https://infocorona.makassar.go.id/

Masks and COVID-19. (2020). *Bulletin de l'Académie Nationale de Médecine*, *204*(9). https://doi.org/10.1016/j.banm.2020.05.0 02

Morishima, M., Mitsuno, T., & Kishida, K. (2017). Problems related to mask use in hay fever sufferers by repeated surveys. *International Journal of Clothing Science and Technology*, *29*(1). https://doi.org/10.1108/IJCST-05-2016-0064

Pardede, J. A. (2018). Teori Dan Model Adaptasi Sister Calista Roy : Pendekatan Keperawatan. *Jurnal Ilmiah Kesehatan*, *10*(1).

Runisa, A. (2020). Keputusan Menteri Kesehatan Republik Indonesia Nomor HK.01.07/Menkes/413/2020 Tentang Pedoman Pencegahan dan Pengendalian COVID-19. *PERMENKES RI*, *2019*(Peraturan Menteri Kesehatan).

Sitompul, Y. Y., Wuri, D. A., Toha, L. R. W., & D.F.K.Foeh, N. (2021). Sosialisasi penerapan jaga jarak dan pemakaian masker pada pedagang daging babi di Pasar Kasih Naikoten, Kota Kupang, Nusa Tenggara Timur. *Media Tropika: Jurnal Pengabdian Masyarakat*, *1*(1), 67–73. Retrieved from http://ejurnal.undana.ac.id/index.php/med iatropika/article/view/4075/2607

Sulselprov.go.id. Makassar-Sulawesi Selatan. (online). https://sulselprov.go.id/pages/info_ lain/22