




Nurses' Actions to Protect Their Families from COVID-19: A Descriptive Qualitative Study

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Abstract

As health service providers, nurses are at a high risk of COVID-19 infection, as are their family members who live with them. This study aimed to explore nurses' actions to protect their families from COVID-19 in Indonesia. This qualitative descriptive study included seventeen nurses who were chosen using the snowball sampling technique. The semi structured interviews explored nurses' actions and behavior, and comparative analysis was performed to analyze the data. The study identified four themes: nurses modified their behavior and environments to protect their families, provided supplements and nutritious food, enhanced their families' knowledge and awareness of COVID-19, and protected their families from social stigma. Nurses play active roles in the health of their family members. The government should support nurses in their roles so that they can remain healthy while caring for COVID-19 patients, and not transmit COVID-19 to their own families.

Keywords

COVID-19, health behavior, nurses, prevention, social stigma, qualitative research, Indonesia

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Introduction

The coronavirus disease-19 (COVID-19) pandemic is threatening everyone worldwide, including in Indonesia. The World Health Organization (WHO) stated that as of September 2020, the number of COVID-19 cases had exceeded 32.7 million cases globally. The global incidence of death from COVID-19 has reached 991,000 people (World Health Organization, 2020). The WHO (2020) also reported more than 2 million new cases of COVID-19 and 36,000 new deaths related to COVID-19 around the world from September 21–27, 2020. The United States (US) is the country with the highest number of COVID-19 cases, followed by the Southeast Asia region, including Indonesia (World Health Organization, 2020).

Indonesia is one of the countries that has been affected by COVID-19, with a fluctuating number of cases. The number of COVID-19 cases in Indonesia as of September 28, 2020, was 278,722; in addition, the number of new cases was increasing by 3,509 each day. The total number of COVID-19 patients who had been declared cured was 206,870, and the COVID-19 mortality rate had reached 10,473 people (Task Force for Handling COVID-19, 2020a). Indonesia's capital city, Jakarta, has been the largest contributor to

Indonesia's COVID-19 cases, with 71,339 cases (Task Force for Handling COVID-19, 2020b). Groups at high risk of contracting the COVID-19 virus include elderly people; children; pregnant women; and people with comorbidities, such as diabetes, hypertension, lung disease, heart disease history, and others (Kusnanto et al., 2020; Ministry of Health Republic Indonesia, 2020). In addition, professionals with direct contact with COVID-19 patients, such as health workers, are at high risk of contracting the disease.

Health workers, such as doctors and nurses, have direct contact with COVID-19 patients. According to the results of a survey conducted by the Indonesian Doctors Association Mitigation Team, as of September 26, 2020, thousands of doctors had already tested positive for COVID-19, and 123 doctors who served in various hospitals in Indonesia had died from COVID-19 (CNBC Indonesia, 2020). Not only

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doctors but also nurses have been affected by COVID-19. The number of nurses who have tested positive for COVID-19 has reached 2,979 across the four provinces with the highest number of COVID-19 cases, namely, DKI Jakarta, East Java, South Sulawesi, and Bali (Deni, 2020). On September 29, 2020, the number of nurses who had died due to COVID-19 had reached 92 (Nabila, 2020). The threat of illness and death to nurses is likely to continue, with the number of COVID-19 patients increasing every day.

The Indonesian government has established a protection strategy especially for health workers, who play an essential role in responding to COVID-19. The strategy includes providing guesthouses for health workers to quarantine, providing personal protective equipment (PPE) from the government and various agencies, conducting free polymerase chain reaction (PCR) tests periodically, providing vitamins and supplements (Ministry of Health Republic Indonesia, 2020), and providing additional incentives (Kominfo, 2020). The program is implemented specifically in COVID-19 referral hospitals and thus has not been implemented for all nurses in Indonesia.

The roles of community nurses have been thoroughly scrutinized. Their roles and responsibilities are clearly written in the guidelines for COVID-19 prevention and control for Indonesians (Ministry of Health Republic Indonesia, 2020). However, there is still limited information about nurses' role in protecting their own families' health to prevent disease transmission to the family. The role of nurses in the COVID-19 pandemic is comprehensive. They provide health care services for COVID-19 patients in hospitals or under quarantine. Nurses also have a role in taking illness prevention tasks, for example, providing health education about COVID-19 to the community. Nurses connect and regularly interact with COVID-19 patients. The COVID-19 transmission takes place very quickly to a person who has a history of contact with other people infected with the COVID-19 or are in the same place as people who are at risk of transmitting the COVID-19 virus (Bai et al., 2020). Nurses' roles place them at a high risk of COVID-19 infection. Nurses living with their nuclear families or interacting with extended family members can place others in their families at risk for COVID-19 infection. However, information about illness prevention actions taken by nurses to protect their families from COVID-19 is still limited, as no previous study has examined this role. This study aimed to explore the actions of nurses who work in hospitals with COVID-19 services to protect their families from the transmission of this disease.

Methods

This study was conducted using a qualitative descriptive design (Sandelowski, 2000). This naturalistic approach is often used in nursing and healthcare to explore issues of immediate importance to provide a comprehensive, descriptive summary of experiences from the viewpoint of participants to inform practice and service delivery.

Participants and Research Locations

Nurses who worked in government COVID-19 referral hospitals and nine private hospitals in Indonesia were recruited for this study using snowball sampling. This technique is used for research with a limited number of potential participants because of accessibility issues or constraints (Cresswell, 2013). In this study, snowball sampling was used, starting from the research team's personal networks, to recruit a sample of nurses currently working in hospitals in a variety of clinical contexts. The study participants were asked to provide recommendations for additional participants. Seventeen nurses participated in the study. The participants came from 17 hospitals on the islands of Java and Sumatra. Java Island was chosen because 70% of Indonesia's population lives on this island, and most COVID-19 cases have occurred in the Java provinces. In addition, Sumatra Island is the closest island to Java and has a low number of COVID-19 cases. The participants were grouped into two categories: group 1 included nurses who worked in hospital wards with direct contact with COVID-19 patients, such as emergency rooms, intensive care units, and COVID-19 isolation wards ($n=9$). Group 2 consisted of nurses who worked in low-risk areas for COVID-19 transmission, such as women's and pediatric wards and outpatient services ($n=8$).

Data Collection

The study protocol was approved by the Human Ethics Committee in the School of Health Science UNJANI, West Java, Indonesia (approval # 02/KEPK/III/2020). Data were collected using semi structured individual interviews between June and August 2020 to explore nurses' actions to protect their families from COVID-19 transmission. The principal investigator and three research team members trained in the data collection processes conducted the interviews. One interview was conducted as a face-to-face interview with social distancing, and the other interviews were conducted via telephone or video conferencing. The participants provided informed consent prior to the interviews. Each interview began with an opening question to build trust between the participant and the interviewer; this question asked about nurses' personal expectations regarding maintaining health during the pandemic. The interviews continued with an exploration of nurses' actions to protect their families from COVID-19. All interviews were conducted in Bahasa (an Indonesian language) and recorded. The duration of the interviews was between 20 and 45 minutes.

Data Analysis

The researchers transcribed the interview data in Microsoft Word. The researchers analyzed the data using a combination of qualitative analysis approaches suggested by Widiastih and Nelson (2018). This approach drew on the sequential process

of qualitative analysis described by Dierckx de Casterlé et al. (2012), with an emphasis on a phase of preparatory work with the data, followed by constant comparative and coding processes to identify themes. The data analysis was also informed by the qualitative content analysis strategies described by Graneheim and Lundman (2004), including identifying and labeling meaning units and sorting codes into categories to formulate themes. The combined approach consisted of four phases: precoding, coding, formulating themes and presenting the themes. The first phase, precoding, involved reading the 17 transcripts multiple times, selecting meaning units based on text describing important aspects of the participants' experiences (e.g., "keeping a distance from our kids,") writing a narrative of each interview reflecting the key components of the participant's story, drawing on this narrative to develop conceptual interview schemes and verifying these schemes against the interview data. The second phase of analysis focused on using the codes (labels) for the meaning units to code the data using NVivo software (version 12) and exploring similarities and differences in the data, grouping the codes into subcategories and categories. The third phase involved formulating themes based on the categories and conducting comparisons between participant groups 1 and 2 (those at high and low risk of COVID-19 transmission). Finally, a presentation of the themes was prepared and supported by relevant quotes from participant interviews. Based on the analysis, four main themes were identified.

Trustworthiness

Trustworthiness was supported in this study by using the guidelines developed by Lincoln and Guba (Lincoln & Guba, 1985; Polit & Beck, 2017) related to credibility, dependability, confirmability, and transferability. Credibility refers to demonstrating internal consistency, ensuring the rigor of the research process, and communicating the actions taken. Credibility was supported by reviewing the data collection two times, including the perceptions between the research and the enumerators. Each interviewer wrote notes on the interview process to ensure that each aspect was appropriate according to the interview guidelines and conducted a briefing before each data collected. Dependability involves evidence of and reasoning for the accuracy, relevance, or meaning of the data. Dependability was ensured by congruence between two or more independent people. It indicates that the findings of qualitative inquiry would be repeatable if the inquiry were to be conducted again within the same cohort of participants, with the same coders and within the same context. Dependability was ensured by defining clear study stages, keeping research diaries, having regular weekly coordination, and ensuring accurate data coding. Confirmability refers to establishing and communicating a link between the data, analytic processes, and findings so that the reader can confirm the adequacy of the findings. Confirmability was ensured by evaluating the research process during meetings

Table 1. Characteristics of Participants ($n = 17$).

Code	Group	Gender	Hospital types
P1	1	Female	Regional referral hospital
P2	1	Male	Regional referral hospital
P3	2	Female	Regional referral hospital
P4	2	Female	National referral hospital
P5	2	Female	National referral hospital
P6	2	Female	Regional referral hospital
P7	1	Male	Regional referral hospital
P8	2	Female	Regional referral hospital
P9	1	Male	Regional referral hospital
P10	2	Female	Private hospital
P11	1	Male	Regional referral hospital
P12	1	Male	Regional referral hospital
P13	2	Female	National referral hospital
P14	2	Male	Private hospital
P15	1	Female	National referral hospital
P16	1	Female	Private hospital
P17	1	Male	Regional referral hospital

Note. Group 1: COVID-19 wards and ER; Group 2: non-COVID-19 wards.

and the reading and analysis of the data together as a team. Transferability provides reasoning and evidence that findings can be generalized or transferred to other empirical settings or points of time. Strategies to support transferability included purposefully sampling according to the study criteria and objectives to obtain a range of experiences, and by providing a description of the context of nurses' experiences.

Results

Table 1 shows the characteristics of the participants involved in this study ($n = 17$). Nine participants were nurses who directly interacted with COVID-19 patients, and eight were nurses who worked in non-COVID-19 wards, including maternal, pediatric, cancer, and outpatient wards. The participants worked in three types of hospitals: national-level COVID-19 referral hospitals ($n = 4$), provincial and district referral hospitals ($n = 10$), and private hospitals ($n = 3$).

Four themes were identified related to nurses' efforts in preventing COVID-19 transmission to their families (Figure 1). The themes included nurses modifying their behavior and environments to protect their families, providing supplements and nutritious food, enhancing their families' knowledge and awareness of COVID-19, and protecting their families' from social stigma.

Theme 1: Nurses Modified Their Behavior and Environments to Prevent the Transmission of COVID-19 to Their Families

The analysis results showed that nurses engaged in various behavioral modifications and actions to prevent the

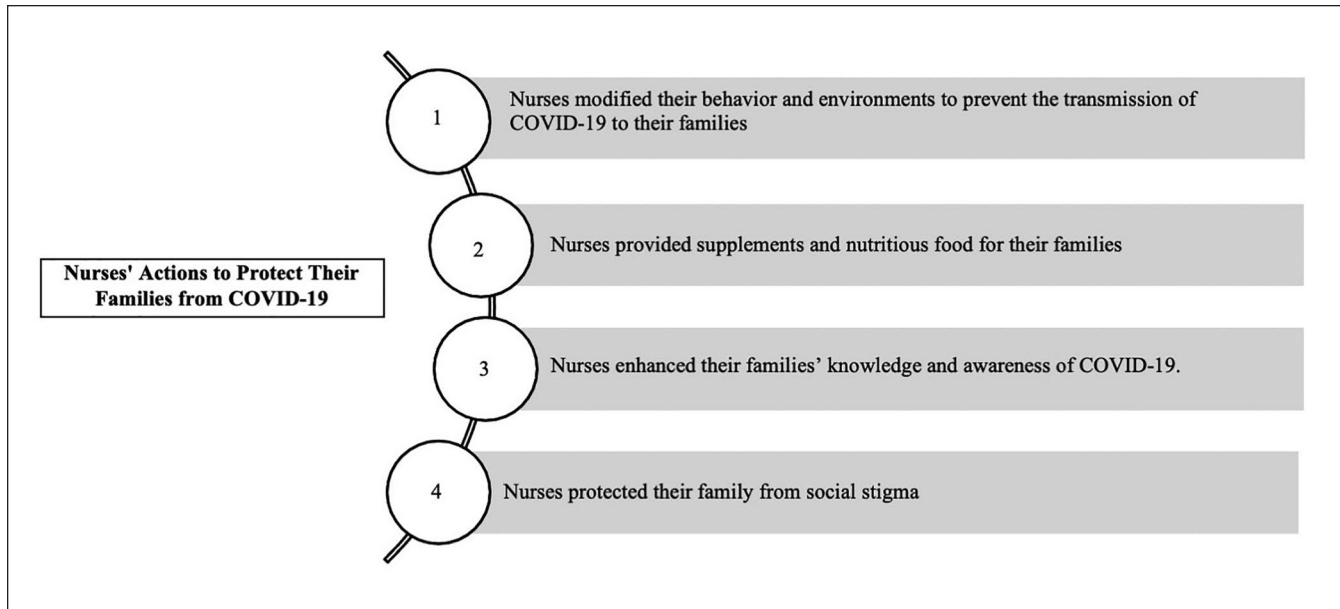


Figure 1. Finding themes.

transmission of COVID-19 to their families. Several nurses said that they limited their interactions with their families and modified their home environments to prevent their families from contracting the virus, as disclosed by the following participant:

"I chose not to go to the dormitory because many nurses from different wards also stay there. On the other hand, my father-in-law has a second house, so I stay there to rest after work for about eight hours. When I feel refreshed, I am ready to see my kids; I return to my own home. I always wear a mask when I have contact with my kids. I also keep a distance from my kids at home." (P15)

Other nurses also described other types of modifications they made to protect their families, including sleeping in a separate room away from their children. For example, one nurse reported that before the pandemic she slept with children, but that she stopped doing that during the pandemic. The nurses rarely hugged and kissed their children. Another nurse reported that she and her family agreed to enter the house from the back door, which was rarely used before. The back door became the main door for her to enter the house after work. She immediately put her dirty clothes in the washing machine and took a shower before seeing her children. Before the COVID-19 pandemic, her children and husband dropped her off and picked her up from work. However, they could no longer do those activities. This nurse did not work in a COVID-19 ward; however, she realized that she still worked in the hospital, which is one of the potential places where COVID-19 can be transmitted.

Theme 2: Nurses Provided Supplements and Nutritious Food for Their Families

Almost all participants conveyed the importance of consuming vitamins, supplements, and nutritious foods to prevent them from getting COVID-19. They provided additional vitamins and nutritious food for their families. The participants believed that nutritious food could increase their stamina and prevent them from getting COVID-19.

"Personally, I provide multivitamins to increase immunity, Ma'am, I do it for illness prevention to my family. On the other hand, food is needed for our body, which I learned from pathophysiology." (P7)

The nurses provided additional chemical and natural supplements to their families. The natural supplements they gave to their families, especially children, included honey, dates, and *Habatussauda*. They believed that these supplements increased body immunity.

Theme 3: Nurses Enhanced Their Families' Knowledge and Awareness of COVID-19

The nurses said that they explained information related to COVID-19 to their families, including how the virus is transmitted and how to avoid contracting the virus. The family members who obtained the information included husbands and wives, children, and parents. For example, the information on the prevention of COVID-19 transmission provided by nurses was related to washing hands, using masks, and maintaining social distancing, as conveyed by the following nurse:

“Our family and I must prepare due to the relatively easy spread of the COVID-19 virus. We have to keep clean, clean the environment, keep our bodies clean, and we also have to limit interactions with our friends. Don’t leave the house if it is not for something important. To our families, we must also teach and allow frequent hand washing because the COVID-19 virus can be transmitted from our hands; it is important that children wash their hands.” (P2)

The nurses conveyed the latest information about COVID-19, especially on the importance of preventing transmission, to their parents and children. One of the nurses reported the challenge of explaining the current condition to children under five, expressed as follows:

“Explaining a pandemic situation to children has difficulties. As it happens, today, my son is whining and wants to play outside because he knows that a tourist spot is open. In this case, we need to provide information that this place is at risk for COVID-19 transmission, and in the end, he is willing to accept my orders.” (P9)

The nurses realized that their family members were at high risk for COVID-19 infection, and by sharing knowledge about COVID-19 and prevention actions, they believed that their family members would have a better understanding and awareness about the disease. Different opinions were reported by nurses whose husbands or wives were also nurses; they did not have challenges related to COVID-19 knowledge and awareness because both spouses knew about the disease.

Theme 4: Nurses Protected Their Families from Social Stigma

The interviews with the nurses showed that they were aware of maintaining personal and family health behavior to avoid stigmatization from the community as a source of COVID-19 transmission because they worked in hospitals. One of the nurses who worked at the COVID-19 national referral hospital conferred with family members about this topic:

“My husband often follows and is involved in social activities at the mosque and the neighborhood. However, since this pandemic, he never went to the mosque again. The people around us see that we work as nurses in hospitals with COVID-19 patients. We feel that other people around us are uncomfortable with our presence.” (P15)

The same experience was also reported by a nurse who worked at a COVID-19 referral hospital at the district level; she and her family decided to limit interactions with the surrounding community. They conveyed that extended families were recommended not to visit them because they work in the hospital, for the convenience of all parties.

Discussion

In this study, we explored the actions and roles of nurses to protect their families from COVID-19 since nurses are at high risk of transmitting COVID-19 to their families. A descriptive qualitative approach was used to obtain a detailed picture. We identified four themes: nurses modified their behavior and environments, provided supplements and nutritious food, enhanced their families’ knowledge and awareness of COVID-19, and protected their families’ from social stigma.

We found that nurses modified their behavior and environments by limiting direct interaction with their families immediately after returning from work, modifying the flow of entry to the house, sleeping in separate bedrooms, wearing masks when interacting with their children, and bathing before seeing their families. The prevention of a disease transmission requires an appropriate risk management strategy. The transmission of infectious diseases depends on social behavior (Oraby et al., 2014). According to Lopes et al. (2016) that the current conditions in which the world is facing the COVID-19 pandemic globally throughout the world which demands a change in behavior. Behavioral changes are needed to manage infections that occur in the community by reducing connectivity and the potential for disease spread (Lopes et al., 2016; Sukartini et al., 2020). Changes or modification of behavior by nurses is a significant effort to prevent the transmission of COVID-19.

While working, nurses applied universal precautionary principles according to the COVID-19 infection risk (Lai et al., 2020; Task Force for Handling COVID-19, 2020b; Ye et al., 2020). As frontline health service providers, nurses face many issues related to the limitations of protection equipment, other mental changes (Iheduru-Anderson, 2021) and a high risk of infection (Task Force for Handling COVID-19, 2020a). The nurses in this study played important role in their families as educators and protected their families from COVID-19. Nurses know about disease COVID-19 prevention actions; on the other hand, many health workers, including nurses, have been infected with COVID-19, these situations encourage them to protect their family from this disease transmission actively. This study provided additional information that can be used as a reference for families and communities to prevent COVID-19 transmission.

We also determined that the nurses were providing vitamin supplements and nutritious foods based on their belief that this would increase their immunity to COVID-19. Researchers have reported that supplements such as vitamin C can increase immunity and prevent COVID-19 infection (Alam et al., 2021; Aman & Masood, 2020). Adequate nutrition (Alwarawrah et al., 2018; Kim, 2018a) and healthy mental and physical activities (Nieman & Wentz, 2019) are also recommended to increase body immunity. A balance of nutrition, exercise, and psychological support is needed to improve immunity and protect

the body from various diseases, including COVID-19. The patients need more nutritious food to maintain their body immunity, as they directly interact with infectious patients. Therefore, their families also have the same needs; thus, nurses provide supplements for their families, especially their children. However, there is no information about their advice related to physical exercise, perhaps due to the pandemic situation.

Nurses provide health education and increase their families' awareness of the importance of maintaining health and protecting them from COVID-19. The participants shared information about COVID-19 directly with their families. They also provided other alternative health information sources, such as health or COVID-19 news from various print or electronic media. According to (Purnamasari & Raharyani, 2020), there is a significant relationship between the knowledge of the COVID-19 and the behaviour in preventing the disease transmission. It is in line with (Azlan et al., 2020) statement that providing consistent health education to the community have positively affected knowledge, attitudes, and behaviour of people in overcoming COVID-19 pandemic. Proper knowledge regarding the prevention of COVID-19 must be developed. The provision of health education can be carried out at the family, community, and national levels. This needs to be considered by the government to improve COVID-19 prevention through wearing masks, washing hands, and maintaining distance. Wearing masks (Ministry of Health Republic Indonesia, 2020) and other actions, such as physical distancing, are important actions to reduce the transmission of COVID-19 (Sjödín et al., 2020).

Stigma related to COVID-19 still exists in Indonesia. The Indonesian government does not remain silent with this condition. They provide lodging facilities for health workers not to return to their residence (home, boarding house). Nevertheless, it affected the health workers' connection to their family, especially nurses who are married and have children. Stigma and negative stereotypes are held by individuals or groups of people toward health workers and COVID-19 patients, contributing to the high death rate due to the coronavirus (National GT Public Communication Team, 2020). Nurses protect their families from community stigma, especially regarding stigma as a factor promoting the transmission of COVID-19. The mass media reported on a community's refusal to provide a place for a nurse's funeral because they were afraid of contracting COVID-19 from the deceased nurse (CNN Indonesia, 2020). Another example of such stigma was reported when several nurses were not allowed to enter their rent houses by landlords because the landlords were afraid that the nurses would spread the virus to the areas around the houses (Alfons, 2020). Discrimination from the community was also experienced by nurses from South Korea who cared for patients with Middle East respiratory syndrome coronavirus (MERS-CoV) (Kim, 2018b). It is ironic for nurses to be stigmatized negatively, as they are

the primary health service providers in the era of COVID-19. An integrated and comprehensive program involving various elements of society is necessary to prevent the transmission of COVID-19 in Indonesia and eliminate the stigma related to COVID-19 in society.

Strengths and Limitations

The results of this study provide information about the actions of nurses to protect their families from COVID-19. The results of this research can be used as information and reference for nurses and the government to determine policies to prevent the spread of COVID-19. Increased knowledge about COVID-19, behavior changes, adequate nutritional and supplement intake, and psychological strengthening through the prevention of stigma are important to prevent the spread of COVID-19 in families and communities. However, this study was limited to a descriptive qualitative approach that provided a general overview of the research results. This study applied more than one method of interview. We have used the mode of interviewing by phone, online meeting, and face to face. Each method has characteristics; for example, when interviewing by phone researcher could not observe the participant's expression. While online meetings sometimes challenge with the internet signal. Those could be the limitation of this research. Further development of the methods and analysis could provide more specific results.

Conclusions

Nurses play active roles in protecting their families from COVID-19 transmission. They modify their behavior and environments to prevent the transmission of COVID-19, and they provide their family members with and remind them to consume supplements and nutritious foods to increase their immunity. In addition, nurses provide education and increase their families' awareness of the importance of maintaining health. However, nurses' provide limited information regarding the importance of physical exercise and mental health as part of actions to improve immunity and health. Finally, nurses protect their families from community stigma, especially stigma related to nurses and their families as sources of COVID-19 transmission.

This study provides new insights into nurses' behavior to protect their families from the transmission of COVID-19 regarding many aspects of primary prevention actions. Although there were no reports of nurses' experiences of negative stigma from society, the study revealed nurses' concern about such stigma for their families. More in-depth research on the stigma of COVID-19 needs to be performed. The government should support nurses' actions to prevent COVID-19 transmission to their families; in this way, nurses could have high productivity and confidence in their provision of nursing care for COVID-19 patients.

Authors' Contribution Statements

Restuning Widiasih: conceptualization (lead), methodology (lead), writing-original draft (lead), data collection (lead) review (lead) and editing (lead); **Ermiami:** conceptualization (supporting), data collection (lead) and writing-developed draft (supporting); **Etika Emaliyawati :** data collection (equal), discussion (equal) and writing-developed draft (supporting); **Titin Sutini :** data collection (equal), discussion (equal) and writing-developed draft (supporting); **Raini Diah Susanti:** writing-developed draft (lead), review (lead) and editing (lead); **Sri Hendrawati:** review (lead) and editing (supporting); **Citra Windani Mambang Sari:** review (supporting) and editing (lead)

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.


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Ethics Approval

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Supplemental Material

Supplemental material for this article is available online.

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