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MORALITY BEFORE KNOWLEDGE

# Behavioral and institutional determinants of PPE use among nurses during the COVID-19 outbreak

**Bunga Azalea Namira[1], Ari Nurfikri[1]***
[1] *Hospital Administration Study Program, Department of Applied Health, Universitas Indonesia, Depok, West Java, 16424, Indonesia.*
*Correspondence: arinurfikri@ui.ac.id

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## ABSTRACT

**Background:** Health services as the sector most affected by this situation must also prepare to face the Covid-19 pandemic. Hospitals must start thinking about the steps to be taken to continue treating Covid-19 patients but at the same time also provide services to general patients with minimal risk of transmission, so it is called a balancing act. **Methods:** This study was obtained by distributing questionnaires to respondents to determine the description of knowledge, attitudes, completeness, comfort, and supervision of respondents, namely nurses at Grha Permata Ibu Hospital. **Findings:** The gender characteristics of nurses at Grha Permata Ibu Hospital are dominated by female nurses as many as 75 people (92.4%) while male nurses as many as 6 people (7.6%). The majority of nurses at Grha Permata Ibu Hospital completed their last education at DIII as many as 65 people (79.7%), and Bachelor Degree+Ners as many as 16 people (20.3%). The average length of work of nurses at Grha Permata Ibu Hospital is 1-10 years, which is as many as 55 people (68.8%). The lowest length of work as a nurse is 1 month and the highest is 25 years. The level of knowledge regarding compliance with the use of PPE among nurses at Grha Permata Ibu Hospital is at a good level of knowledge, which is as many as 76.3% and less good, which is as many as 23.8%. **Conclusion:** People who are vulnerable to infection are people who are close to patients or nurses who treat Covid-19 patients. Nurses are currently at significant risk of contracting the infection so it is important for nurses to protect themselves from exposure to the virus. This is what makes nurses and doctors feel unsafe in using PPE because in providing care to patients, the corona virus has been proven to survive in the environment and will be a potential source of infection for hours or even days. **Novelty/Originality:** This study reveals that the most common reason for not using PPE among nurses was the unavailability of PPE—an operational gap that is often overlooked in previous research on PPE compliance in hospital settings during the pandemic.

**KEYWORDS**: covid-19; personal protective equipment; nurses; hospital safety; health workers

## 1. Introduction

COVID-19 was first reported in Indonesia on March 2, 2020 with two cases. Data from February 23, 2022 shows 57,491 confirmed cases and 257 deaths. As an effort to control the spread of SARS-COV-2, the Indonesian government implemented a social restriction policy including Large-Scale Social Restrictions which is regulated in Government Regulation Number 21 of 2020 concerning Large-Scale Social Restrictions in the Context of Accelerating COVID-19 Handling (WHO, 2020). Health services as the sector most affected by this situation must also prepare for the COVID-19 pandemic. Hospitals must start thinking about the steps to be taken to continue treating COVID-19 patients while at the

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same time providing services to general patients with the minimum risk of transmission, so it is called a balancing act (Kementrian Kesehatan, 2021).

Susceptible people at risk of infection are people who are in close proximity to patients or nurses caring for COVID-19 patients. Nurses today are at significant risk of contracting infections so it is important for nurses to protect themselves from exposure to the virus. This is what makes nurses and doctors feel unsafe in using personal protective equipment because in providing care to patients, the corona virus has been shown to survive in the environment and will be a potential source of infection for a period of hours and even days (Shahmari et al., 2020). Repeated use of personal protective equipment may be unsafe to use for long periods of time, jeopardizing the safety of nurses and doctors (Manookian et al., 2022). It is known that hospitals are potential environments for disease transmission. Employees in hospitals are also at risk of contracting infectious diseases in carrying out their duties. There are several sections or units in the hospital that are vulnerable to the spread of infection in them such as the ICU unit, obstetrics and gynecology department, treatment rooms (internal medicine department) and surgical treatment. Thus officers working in these sections are at risk of contracting infections. For this reason, it is very important to apply the use of personal protective equipment to prevent transmission of infection in every action by health workers such as nurses (Asmi, 2017).

Individuals who are most at risk of infection are those who are in close contact with COVID-19 patients or health workers who care for COVID-19 patients. One of the efforts that can be used to break the transmission of COVID-19 is by using Personal Protective Equipment. Personal Protective Equipment is a device that has the ability to protect a person whose function is to isolate part or all of the body from potential hazards. Health workers can protect themselves when caring for patients by complying with infection prevention and control practices, which include administrative, environmental and engineering controls as well as the proper use of Personal Protective Equipment, namely, appropriate selection of the appropriate type of Personal Protective Equipment, how to wear, how to remove and how to dispose or wash Personal Protective Equipment. In caring for COVID-19 patients, health workers are very vulnerable to being infected, so the Personal Protective Equipment used is standard Personal Protective Equipment based on risk assessment, there are several countries that have reported health workers in their countries contracting COVID-19 (Wati et al., 2020).

Nurses are required to use Personal Protective Equipment to avoid occupational safety and health risks in hospitals in providing nursing care. There are several factors associated with nurse compliance to use Personal Protective Equipment including knowledge, attitude, completeness, comfort, and supervision (Soemargono, 2020). Nurses in carrying out their role as nursing care providers are required to maintain personal safety from hazards and the impact caused by using self-protection, where self-protection is a prevention to avoid or minimize danger (Fielrantika & Dhera, 2017). Data from China's National Health Commission reports that there are at least 1,716 cases where medical personnel in the country have contracted COVID-19 with 80% experiencing mild symptoms. Indonesia itself also estimates that as of March 28, 2020, there are around 61 health workers who have contracted COVID-19 and this number will continue to grow if efforts to prevent the spread and transmission of COVID-19 are not addressed immediately, one of which is by providing effective and efficient Personal Protective Equipment for health workers (Soemargono, 2020).

Based on WHO analysis, an estimated 89 million medical masks are required for COVID-19 treatment every month. For examination gloves, the figure reaches 76 million, while the international demand for protective eyewear alone is about 1.6 million per month, so WHO and CDC issued several guidelines for the rational and effective use of Personal Protective Equipment and alternatives for health workers in times of crisis like this. Thus, each health service facility can make their own standard operating procedures based on local conditions while still using the principles of standard precautions and isolation precautions (Direktur Jenderal Pelayanan Kesehatan, 2020). Standard operating procedures for the availability of Personal Protective Equipment that must be met in health facilities are surgical masks

(Medical/Surgical masks), N95 respirators, disposable gowns, surgical gloves (Surgical Gloves), examination gloves (Examination Gloves), face shields (Face Shield), eye protection (Goggles), medical coveralls, heavy duty aprons, waterproof boots and shoe covers (Shoe Cover) (Soemargono, 2020).

Health workers and employees working in health facilities must be equipped with personal protective equipment, as these groups are at high risk of being infected with the virus when handling COVID-19 patients. Actually, health facilities have provided Personal Protective Equipment, but the number is still far from enough. In fact, these health workers can be likened to soldiers who are at the forefront of the battlefield when dealing with positive COVID-19 patients (WHO, 2020). The knowledge of medical personnel regarding the use of Protecting Equipment when handling COVID-19 is important as a way to prevent transmission from COVID-19 patients to medical personnel, the knowledge of medical personnel regarding the use of Protecting Equipment can affect the attitude of medical personnel towards the use of Protecting Equipment rationally and appropriately (Astuti, Y. et al, 2018).

According to Ramlah in Azzahri & Ikhwan (2019) the lack of knowledge that nurses have about personal protective equipment and the risks that cause work accidents and how to prevent them causes nurses. Ignoring the use of Protective Equipment and considering risks in the workplace as challenges that must be faced. According to Nani in Azzahri & Ikhwan (2019) nurses are very at risk of being infected with diseases suffered by patients they treat if they are not careful or vigilant in maintaining their health. Nurses must use standard Personal Protective Equipment as a form of implementation of universal precautions in health services. Universal vigilance is an effort to prevent nosocomial infections (infections arising from medical actions) which continue to pose a threat to health workers (Azzahri & Ikhwan, 2019). Grha Permata Ibu Hospital began receiving covid 19 patients since March 28, 2020. The negligence of Grha Permata Ibu Hospital nurses in using Personal Protective Equipment is often found when nurses install infusions and injections but do not use gloves. In connection with the problems mentioned, the author is interested in conducting research on the description of the use of personal protective equipment for nurses at Grha Permata Ibu Hospital.

## 2. Methods

This research was conducted at Grha Permata Ibu Hospital which is located at Jalan KH. M. Usman No.168 Kukusan, Beji, Depok City. Data collection was carried out on March 22 - March 29, 2022. The research process begins with the submission of the title then the preparation of the Final Work Assignment. Making questionnaires was carried out March 22-23, 2022. The author then distributes questionnaires starting from March 28-29, 2022 using google form and ends with data processing. Data collection was obtained by distributing questionnaires to respondents to determine the description of knowledge, attitudes, completeness, comfort, and supervision of respondents, namely nurses at Grha Permata Ibu Hospital. The questionnaire is divided into two parts, where the first part contains a profile or brief data from respondents such as age, length of work as a nurse, latest education, gender and the second part contains questions about the use of personal protective equipment including knowledge and attitudes to the use of personal protective equipment at Grha Permata Ibu Hospital. After that the respondents were asked to fill out the questionnaire given by the researcher. The researcher collaborated with the head nurse who worked at Grha Permata Ibu Hospital.

Data collection was carried out for 2 days in April 2022. Researchers collaborated with the head nurse of Grha Permata Ibu Hospital in collecting data and providing instructions that were easily understood by respondents. Respondents filled out the questionnaire in the room when the patient was quiet. After all willing respondents have filled out the questionnaire and the data provided is complete and all respondents have filled out the questionnaire, all data is collected and then analyzed.

In the editing stage, an examination of the questionnaires that have been filled in by respondents is carried out. In addition, checking the contents of the questionnaire whether the answers already in the questionnaire are complete, clear, and relevant. Then a completeness check is carried out where all questions have been filled in. Coding is an activity of converting data in the form of letters into data in the form of numbers or numbers. Researchers gave a code to each questionnaire. The aim is to facilitate data analysis and speed up data entry. At the processing stage, data that is filled in completely and has passed the coding process is processed by entering data (data entry) from all questionnaires collected. The final process in data processing is to recheck the data that has been entered to see whether there are any errors, especially the suitability of the coding that has been determined by typing (Nurina Oktavianti, 2020).

## 3. Results and Discussion

### *3.1 Factors influencing the use of personal protective equipment (PPE)*

#### *3.1.1 Knowledge*

COVID-19 is a disease caused by a new type of coronavirus (SARSCoV-2) in late 2019, in December, the outbreak was first detected in Wuhan, Hubei Province, China. Most of the pneumonia patients came from street vendors in the South China market in Wuhan. On January 7, 2020, researchers managed to determine the cause of this pneumonia, a new coronavirus. The World Health Organization officially named the disease COVID-19 (Coronavirus Disease 2019), and the name of the virus is SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2 (Susilo et al., 2020). As of January 30, 2020, the number of COVID-19 patients had increased rapidly to 7,734. On the same day, various countries in Asia, Europe, and Australia confirmed 90 positive cases of COVID-19 patients. Also on January 30, 2020, WHO sounded the alarm for a public health emergency of global concern (PHEIC). The first COVID-19 case that spread in Indonesia on March 2, 2020, has confirmed 2 patients from Jakarta. As of June 15, 2020, there were 38,277 confirmed positive cases of COVID-19 and 2,134 confirmed deaths. In East Java, on June 19 2020, the number of confirmed cases of COVID-19 was 9,046, confirmed cases recovered were 2,763, and confirmed deaths were 721 (Susilo et al., 2020). Then, knowledge is a result of curiosity through sensory processes, especially in the eyes and ears towards certain objects. Knowledge is an important domain in the formation of open behavior (Donsu, 2017). According to Notoatmodjo in Ragil (2016) knowledge is the result of human sensing or the result of someone knowing about an object through the five senses they have. The five human senses for sensing objects are sight, hearing, smell, taste and touch. At the time of sensing to produce this knowledge is influenced by the intensity of attention and perception of the object. A person's knowledge is mostly obtained through the sense of hearing and sight (Ragil, 2016). Level of knowledge according to Notoatmodjo in Ragil (2016) knowledge or cognitive is a very important domain in shaping a person's actions. Knowledge included in the cognitive domain has 6 levels, namely: know, know is interpreted as remembering a material that has been studied previously. Included in this level of knowledge is recalling something specific from all the materials studied or stimuli that have been received. Therefore, knowing is the lowest level of knowledge. Verbs to measure that people know about what is being studied include mentioning, describing, defining, stating and so on. Understanding (comprehension), understanding is defined as the ability to correctly explain a known object, and to be able to interpret the material correctly. People who have understood an object or material must be able to explain, give examples, conclude, predict and so on regarding the object being studied.

Application, application is defined as the ability to use material that has been studied in real situations or conditions. Application here can be defined as the application or use of laws, formulas, methods, principles and so on in other contexts or situations. Analysis, analysis is the ability to describe material or an object into components, but still within an

organizational structure, and still related to each other. This analytical ability can be seen from the use of verbs, such as being able to describe (make a chart), distinguish, separate, group and so on. Synthesis, synthesis refers to the ability to place or connect parts in a new whole. In other words, synthesis is the ability to compose new formulations from existing formulations. For example, being able to compose, plan, summarize, adjust, and so on to existing theories or formulations. Evaluation, this evaluation is related to the ability to justify or assess a material or object. These assessments are based on self-determined criteria, or using existing criteria (Ragil, 2016).

Factors that influence knowledge, according to Fitriani in Yuliana (2017), the factors that influence knowledge are as follows: education, education influences the learning process, the higher a person's education, the easier it is for that person to receive information. Increasing knowledge is not absolutely obtained in formal education, but can also be obtained in non-formal education. A person's knowledge of an object contains two aspects, namely positive and negative aspects. These two aspects determine a person's attitude towards a particular object. The more positive aspects of an object that are known will foster a positive attitude towards the object. Higher education someone gets information from other people and mass media. The more information that comes in, the more knowledge is obtained about health. Sources of information, information obtained from both formal and non-formal education can provide short-term knowledge (immediate impact), resulting in changes and increased knowledge. Technological advances provide a variety of mass media that can influence public knowledge about new information. Means of communication such as television, radio, newspapers, magazines, counseling, and others that have a major influence on the formation of people's opinions and beliefs.

Socio-cultural and economic, habits and traditions that a person does without going through reasoning whether what is done is good or not. A person's economic status will also determine the availability of facilities needed for certain activities, so that socio-economic status will affect a person's knowledge. Environment, the environment is everything that is around the individual, both physical, biological, and social environments. The environment influences the process of knowledge entering the individual in that environment. This happens because of the reciprocal interaction that will be responded to as knowledge. Experience, knowledge can be obtained from personal experience or the experiences of others. This experience is a way to obtain the truth of knowledge. Age affects a person's ability to grasp and think. Increasing age will further develop a person's mindset and ability to grasp so that the knowledge gained will be more (Yuliana, 2017).

### *3.1.2 Attitude*

According to Yuniarti in Annisawati (2019) attitude places a person in a frame of mind about liking or disliking something, moving towards or away from it. A person's attitude forms a pattern, and changing it requires many difficult adjustments in other attitudes (Annisawati, 2019). Meanwhile, according to Natoatmodjo in Damayanti (2017) attitude is a person's closed response to a particular stimulus or object, which already involves the factors of opinion and emotion concerned (happy or not happy, agree or not agree, good or not good) (Damayanti, 2017). According to Natoatmodjo in Damiyanti (2017) it is explained that attitudes consist of various levels, including: Receiving, accepting means that people (subjects) want and pay attention to the stimulus given (object). Responding, giving answers when asked, doing and completing tasks given is an indication of attitude. Valving, inviting others to work on or discuss with others about a problem is an indication of an attitude of respect. Responsible, being responsible for everything that has been chosen with all the risks is the highest attitude (Damayanti, 2017).

Comfort, according to Wolor et al. (2022) the concept of comfort is very difficult to define because it is more of an individual's responsive assessment (Wolor et al., 2022).. According to the Great Dictionary of the Indonesian Language, comfort is fresh, healthy while comfort is a state of comfort, freshness, coolness. According to Wolor et al. (2022) explains that comfort is a state of having fulfilled basic human needs that are individual and

holistic. By fulfilling comfort, it can cause a feeling of well-being in the individual (Wolor et al., 2022). According to Wolor et al. (2022) comfort and feelings of comfort are a person's comprehensive assessment of their environment. Humans assess environmental conditions based on stimuli that enter them through the six senses through nerves and are digested by the brain to be assessed. In this case, what is involved is not only physical biological problems, but also feelings. Sound, light, smell, temperature and other stimuli are captured at once, then processed by the brain. Then the brain will provide a relative assessment of whether the condition is comfortable or not (Wolor et al., 2022).

### *3.1.3 Completeness and supervision*

Personal protective equipment has the benefit of protecting the worker's body parts whose function is to protect part or all of the body from potential hazards of external exposure in the workplace. The personal protective equipment in question includes gloves, masks, shoes and work clothes (Anggraitya, 2017). Supervision can be defined as the process of determining what must be achieved, what is implemented, assessing the implementation and then if necessary making improvements so that the implementation is in accordance with what is planned and in accordance with the standards set by the company or organization (Suhariyanto et al., 2018). According to Handoko in Suhariyanto (2018) supervision can be defined as a process to ensure that organizational and management goals are achieved. In general, to be able to achieve organizational or company goals, good supervision is needed from the company to ensure that the implementation standards for activities have been carried out in accordance with the planning previously set by the company (Suhariyanto et al., 2018).

Meanwhile, according to Mockler in Suhariyanto (2018), management supervision is a systematic effort to set implementation standards with planning objectives, design feedback information systems, compare actual activities with previously set standards, determine and measure deviations, and take corrective actions as needed to ensure that all company resources are used in the most effective and efficient way in achieving company goals (Suhariyanto et al., 2018). Based on the description above, it can be concluded that supervision is a way for organizations to find and correct deviations made by employees. The process aims to find out whether the work done is in accordance with the planning and standards that have been previously set, so that later the organization can realize more effective and efficient performance (Suhariyanto et al., 2018).

### *3.2 Characteristics of respondents*

The distribution of gender data is categorized into 2 categories, namely male and female. The last education is categorized into four categories, namely Master Degree, Bachelor Degree, Associate's Degree. The results of the distribution of gender and final education are shown in table 1.

Table 1 shows the characteristics of respondents based on gender. The distribution of characteristics based on gender shows that the research subjects were dominated by nurses with female gender, namely 75 people (92.4%) and the remaining male nurses amounted to 6 people (7.6%). This is because the majority of nurses who work at Grha Permata Ibu Hospital are women. Based on the distribution of the last education, most respondents completed their last education at DIII, namely 65 people (79.7%) then Bachelor Degree as many as 16 (20.3%) and the lowest 0 (0%) were SPK and S2.

According to the Minister of Health Regulation number 26 of 2019, the types of nurses are divided into two, namely vocational nurses and professional nurses. Vocational nurses are nurses who have graduated from nursing vocational education at the lowest level of nursing diploma three program, while professional nurses are nurses who have graduated from nursing professional education which is a nursing profession program and a nursing specialist program (Kementrian Kesehatan, 2019). Nurse education at Grha Permata Hospital is in accordance with the provisions according to PMK number 26 of 2019, namely

with a minimum DIII education and there are professional nurses with Bachelor Degree + Ners graduates.

Table 1. Distribution of gender characteristics and last education

| Num | Characteristics Respondents | n | Percentage % |
|---|---|---|---|
| 1 | Type Sex | | |
| | Man | 6 | 7.6% |
| | Woman | 75 | 92.4% |
| | Total | 80 | 100% |
| 2 | Last education | | |
| | SPK | 0 | 0% |
| | Associate's Degree | 65 | 79.7% |
| | Bachelor Degree+Nurses | 16 | 20.3% |
| | Master Degree | 0 | 0% |
| | Total | 80 | 100% |
| 3 | Length of work | | |
| | 1-12 Months | 10 | 12.5% |
| | 1-10 Years | 55 | 68.8% |
| | 10-20 Years | 14 | 17.5% |
| | >20 Years | 1 | 1.3% |
| | Total | 80 | 100% |

The majority of respondents involved were female nurses. The difference in the use of personal protective equipment between male nurses and female nurses is not much different. This is because the author did not test differences between male and female nurses on factors that could influence the use of personal protective equipment (Purba, 2021). The data obtained in the field also shows that male and female nurses have almost the same ability to provide action and compliance in using personal protective equipment. The average value of Grha Permata Ibu Hospital nurses based on the length of time working as a nurse is 1-10 years, namely 55 people (68.8%). The lowest length of work as a nurse is 1 month and the highest is 25 years. According to Anderson's theory in Andriyanto (2017), that where he is the longer the easier it is to understand the task so that it provides an opportunity to improve achievement and adapt to one's environment, the better the experience gained (Andriyanto, 2017). According to Madyanti in Andriyanto (2017) a person's experience in his work and the environment when he works is influenced by the work period of the workforce, the longer he works, the more experience and skills he has, so that it can make someone work better than someone or labor who has not had any experience. Experience in any case will increase vigilance, one of which is against work accidents. As age increases, the period of work in the company and the length of work will increase. This should be inversely proportional to the workforce who have just entered work. at the beginning, they did not know the ins and outs of the type of work, let alone safety in the workplace in depth. The experience gained in the workplace will be interrelated with the length of work a person can do, so the longer a person works the more experience and the higher his knowledge and skills (Andriyanto, 2017).

### *3.2 Overview of knowledge on compliance with the use of personal protective equipment*

The distribution of respondents' knowledge was categorized into 2 categories: good and poor. The results obtained were collected and then analyzed in total knowledge which was then categorized into good and poor knowledge. The following distribution of the knowledge picture is shown in table 2.

In the data normality test on the frequency distribution of knowledge, researchers use the Kolmogorov-Smirnov test if the p value is <0.05, the distribution is not normal and p>0.05 is a normal distribution. The steps taken by the author are to select the analyze>descriptive statistics>explore>plots>normality plots with test menu, then the

output results of the significance value in the test of normality table will come out .000 which means p < 0.05 so that the data includes abnormal distribution data.

Table 2. Distribution of respondents answers knowledge of compliance with the use of personal protective equipment

| Description | Answer | | | |
|---|---|---|---|---|
| | Correct | | Wrong | |
| | n | % | n | % |
| Definition of personal protective equipment | 80 | 100.0 | 0 | 0 |
| Examples of personal protective equipment for nurses | 80 | 100.0 | 0 | 0 |
| When is personal protective equipment required used? | 76 | 95.0 | 4 | 5.0 |
| Benefits of personal protective equipment | 80 | 100.0 | 0 | 0 |
| Benefits of personal protective equipment sarong hands | 73 | 91.3 | 7 | 8.8 |
| Stages method wearing personal protective equipment mask | 80 | 100.0 | 0 | 0 |
| Benefit use shoe closed moment help labor | 80 | 100.0 | 0 | 0 |
| The way that can be done to prevent nurse exposed | 71 | 88.8 | 9 | 11.3 |
| What consequence if no use personal protective equipment | 78 | 97.5 | 2 | 2.5 |

In the next stage, the researcher classifies the data into 2 categories, namely the good and less good categories using the median approach because the results of the normality test of the knowledge distribution data that the data is not normal. The step the author takes is to select the anlyze > descriptive statistics > frequencies > statitstics > median menu, then the median output results obtained in the knowledge frequency distribution will come out, which means that if > 45 is in the good category and if < 45 the data is in the less good category.

Table 3. Frequency distribution of nurses knowledge of personal protective equipment

| Knowledge | Frequency (f) | Percentage (%) |
|---|---|---|
| Not enough Good | 19 | 23.8% |
| Good | 61 | 76.3% |
| Total | 80 | 100% |

Table 3 shows the distribution of total knowledge of the respondents. Frequency distribution based on total knowledge categorized into 2 which shows that good knowledge as many as 61 people (76.3%) and less good knowledge as many as 19 people (23.8%). This shows that the total knowledge of nurse respondents at Grha Permata Ibu Hospital is good, which is 76.3%. Knowledge is a process from not knowing to knowing, this occurs after people do sensing through sight, hearing, smell, taste, and touch of a particular object. Another opinion also reveals that knowledge is information that has been combined with understanding and the potential to act, which then sticks in a person's mind. The characteristics of respondents based on total knowledge are in the range of total knowledge in the high knowledge range. Univariate results produce data that less good knowledge as much as 23.8% and good knowledge as much as 76.3%. This shows that the total knowledge of the nurse respondents of Grha Permara Mother Hospital includes good knowledge.

Nurses who deal directly with patients every day allow nurses to have much better knowledge. According to Agnovianto et al. (20202), the source of knowledge is obtained through direct experience every day. Good knowledge indicates that the nurse has good knowledge about personal protective equipment and the importance of using personal protective equipment. Knowledge gained directly while working will be very difficult to forget because it is used to being done every day.

### *3.3 Reasons why nurses do not use personal protective equipment*

The distribution of the reasons for not using personal protective equipment by nurses is categorized into 4, namely the first because of the unavailability of personal protective equipment, the second because personal protective equipment is not comfortable to wear,

the third because they are used to not using personal protective equipment, and the fourth is lazy to use personal protective equipment. The distribution of the reasons for nurses not using personal protective equipment where the reason for not using personal protective equipment is due to the unavailability of personal protective equipment as much as 59.5%, because personal protective equipment is not comfortable to wear as much as 31.6%, because they are used to not using personal protective equipment as much as 5.1%, and because they are lazy to use personal protective equipment as much as 3.8%. It can be concluded that the reason Grha Permata Ibu Hospital nurses do not use personal protective equipment is mostly because personal protective equipment is not available.

As stated by Agustine in Rambe (2021), companies are required to provide personal protective equipment to workers and ensure that each worker uses it at work. In the use of personal protective equipment, things that must be considered are the selection and determination of the type of personal protective equipment, standards, training on how to use and maintain personal protective equipment, effectiveness of use, supervision of use, maintenance and deviation / damage (Rambe, 2021). Therefore, the availability of personal protective equipment is a supporting factor in compliance with using personal protective equipment to prevent accidents and work risks that occur in hospitals, if the hospital does not provide personal protective equipment, it means that the hospital has endangered its workers from the risk of accidents and diseases that will arise in the work environment.

### *3.4 Overview of attitudes towards compliance with the use of personal protective equipment*

The distribution of respondents attitudes was categorized into 2 categories, namely good and less good. The results obtained were collected and then analyzed in a total attitude which was then categorized into good and less good attitudes. The following distribution of the attitude picture is shown in table 4 below.

Table 4. Distribution of respondents answers to attitude towards compliance with the use of personal protective equipment

| Description | Answer | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | STS | | TS | | RR | | S | | SS | |
| | n | % | n | % | n | % | n | % | n | % |
| Indicator Honesty | | | | | | | | | | |
| Use sarong hand | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 26.3 | 59 | 73.8 |
| Using a mask | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 15.0 | 68 | 85.0 |
| Indicator Discipline | | | | | | | | | | |
| Use glasses protector although procedure complicated | 0 | 0 | 1 | 1.3 | 4 | 5.0 | 28 | 35.0 | 47 | 58.8 |
| Use gown protector (apron) although procedure complicated | 0 | 0 | 0 | 0 | 1 | 1.3 | 18 | 22.5 | 61 | 76.3 |
| Indicator Participation in Group | | | | | | | | | | |
| Remind friend nurse for use sarong hand If forget | 0 | 0 | 1 | 1.3 | 0 | 0 | 27 | 33.8 | 52 | 65.0 |

In testing the normality of data on the frequency distribution of attitudes, researchers use the Kolmogorov-Smirnov test if the p value is <0.05 then the distribution is not normal and p>0.05 is a normal distribution. The steps taken by the author are to select the analyze >descriptive statistics>explore>plots>normality plots with test menu, then the output results will come out the significance value in the test of normality table is 0.000 which means p<0.05 so that the data includes abnormal distribution data.

In the next stage, the researcher classifies the data into 2 categories, namely the good and less good categories using the median approach because the results of the normality test of the attitude distribution data show that the data is not normal. The step the author takes is to select the anlyze>descriptive statistics > frequencies >statitstics >median menu, then the median output results obtained in the attitude frequency distribution will come out, which means that if >24 is in the good category and if< 24 the data is in the less good category.

Table 5. Frequency distribution of nurses attitudes towards personal protective equipment

| Attitude | Frequency (f) | Percentage (%) |
|---|---|---|
| Not enough Good | 27 | 33.8% |
| Good | 53 | 66.3% |
| Total | 80 | 100% |

Table 5 shows the distribution of the total attitude of the respondents. The frequency distribution based on the total attitude categorized into 2 shows that the attitude is good as many as 53 people (66.7%) and the attitude is less good as many as 27 people (33.8%). This shows that the total attitude of nurse respondents at Grha Permata Ibu Hospital is good, namely 66.3%. Attitude is a reaction or response that is still closed from a person to a stimulus or object. The univariate results showed that the attitude was good as much as 66.3% and the attitude was not good as much as 33.8%. From the results of the research conducted, it was found that among respondents who disagreed or strongly disagreed there were respondents who had good knowledge. The results of this study are in accordance with the theory put forward by Green in Nawangwulan (2020), that attitudes are determined or formed from several factors, one of which is knowledge. Green also stated that knowledge is a very important domain for the formation of one's actions (Nawangwulan, 2020). Most respondents have good knowledge of the use of personal protective equipment when working so that a good attitude is formed as well.

*3.5 Description of completeness of compliance with the use of personal protective equipment*

The distribution of respondents completeness was categorized into 2 categories, namely good and poor. The results obtained were collected and then analyzed in total completeness which was then categorized into good and poor completeness. The following distribution of the completeness picture is displayed in table 6.

Table 6. Distribution of respondents answers knowledge of compliance with the use of personal protective equipment

| Description | Answer | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | STS | | TS | | RR | | S | | SS | |
| | n | % | n | % | n | % | n | % | n | % |
| Surgical Mask Indicator | | | | | | | | | | |
| Always using a surgical mask | 3 | 3.8 | 16 | 20.0 | 3 | 3.8 | 20 | 25.0 | 38 | 47.5 |
| N95 Respirator Indicator | | | | | | | | | | |
| Always using an N95 respirator | 1 | 1.3 | 4 | 5.0 | 2 | 2.5 | 38 | 47.5 | 35 | 43.8 |
| Indicator Glass eye Protector | | | | | | | | | | |
| Always use glass eye protector | 1 | 1.3 | 4 | 5.0 | 2 | 2.5 | 38 | 47.5 | 35 | 43.8 |
| Indicator Protector Face | | | | | | | | | | |
| Always use glass eye protector | 1 | 1.3 | 2 | 2.5 | 2 | 2.5 | 46 | 57.5 | 29 | 36.3 |
| Indicator Sarong Hand Surgery | | | | | | | | | | |
| Always have sarong hand surgery | 1 | 1.3 | 4 | 5.0 | 4 | 5.0 | 43 | 53.8 | 28 | 35.0 |
| Indicator Closing Head | | | | | | | | | | |
| Always use closing head | 1 | 1.3 | 0 | 0 | 1 | 1.3 | 38 | 47.5 | 40 | 50.5 |
| Indicator Coverall Medical | | | | | | | | | | |
| Always using medical coveralls | 1 | 1.3 | 3 | 3.8 | 5 | 6.3 | 45 | 57.5 | 25 | 31.3 |
| Indicator Heavy Duty Aprons | | | | | | | | | | |
| Always use Heavy Duty Aprons | 1 | 1.3 | 1 | 1.3 | 2 | 2.5 | 50 | 62.5 | 26 | 32.5 |
| Protective Shoe Indicator | | | | | | | | | | |
| Always use shoe protector | 1 | 1.3 | 1 | 1.3 | 3 | 3.8 | 49 | 61.3 | 26 | 32.5 |
| Waterproof Boots Indicator | | | | | | | | | | |
| Always use waterproof boots | 1 | 1.3 | 3 | 3.8 | 3 | 3.8 | 50 | 62.5 | 23 | 28.8 |

In testing the normality of data on the frequency distribution of completeness, researchers use the Kolmogorov-Smirnov test if the p value is < 0.05 then the distribution is not normal and p > 0.05 is a normal distribution. The steps taken by researchers are to

select the analyze > descriptive statistics > explore > plots > normality plots with test menu, then the output results of the significance value in the test of normality table will come out .000 which means p < 0.05 so that the data includes abnormal distribution data.

In the next stage, the researcher classifies the data into 2 categories, namely the good and less good categories using the median approach because the results of the normality test of the complete distribution data show that the data is not normal. The step taken by the researcher is to select the anlyze > descriptive statistics > frequencies > statitstics > median menu, then the median output results obtained in the frequency distribution of completeness will come out, which means that if > 45 is in the good category and if < 45 data is in the less good category.

Table 7. Frequency distribution of nurse completeness of personal protective equipment

| Completeness | Frequency (f) | Percentage (%) |
|---|---|---|
| Not enough Good | 34 | 42.5% |
| Good | 46 | 57.5% |
| Total | 80 | 100% |

Table 7 shows the distribution of total completeness of respondents. Frequency distribution based on total completeness categorized into 2 which shows that good completeness is 46 people (57.5%) and poor completeness is 34 people (42.5%). This shows that the total completeness of nurse respondents at Grha Permata Ibu Hospital is good, which is 57.5%. Personal protective equipment is one of the first choices used to control exposure. This personal protective equipment can consist of masks, aprons, face shields, boots, gloves that have their respective functions according to the body to be protected. Univariate results show that 57.5% of nurses at Grha Permata Ibu Hospital use complete personal protective equipment properly, because the use of complete personal protective equipment in the correct way can reduce the incidence of injuries and work accidents in nurses (Anggraitya Dhera, 2017).

### *3.6 Overview of comfort regarding compliance with the use of personal protective equipment*

The distribution of respondent comfort is categorized into 2 categories, namely good and poor. The results obtained are collected and then analyzed in total comfort which is then categorized into good and less good comfort. The following is the distribution of the comfort picture shown in table 8 below.

Table 8. Distribution of respondents answers on comfort regarding compliance with the use of personal protective equipment

| Description | Answer | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | STS | | TS | | KS | | S | | SS | |
| | n | % | n | % | n | % | n | % | n | % |
| Indicator Comfortable Used | | | | | | | | | | |
| Comfortable use personal protective equipment | 1 | 1.3 | 1 | 1.3 | 3 | 3.8 | 41 | 51.3 | 34 | 42.5 |
| Indicator No Bother Work | | | | | | | | | | |
| No disturbed use personal protective equipment | 2 | 2.5 | 0 | 0 | 5 | 6.3 | 49 | 61.3 | 24 | 30.0 |
| Personal protective equipment used in accordance with body | 1 | 1.3 | 1 | 1.3 | 5 | 6.3 | 44 | 55.0 | 29 | 36.3 |
| Indicator Protection Effective | | | | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Personal protective equipment has given protection | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 58.8 | 33 | 41.3 |
| Indicator Easy Cleaned | | | | | | | | | | |
| Personal protective equipment used easy cleaned up | 0 | 0 | 2 | 2.5 | 4 | 5.0 | 50 | 62.5 | 24 | 30.0 |

In the data normality test on the comfort frequency distribution, the researcher used the Kolmogorov-Smirnov test if the p value <0.05 then the distribution is not normal and p>0.05 is a normal distribution. The steps taken by the author are to select the analyze > descriptive statistics >explore >plots >normality plots with test menu, then the output results of the significance value in the test of normality table will come out 0.000 which means p<0.05 so that the data is not normally distributed.

In the next stage, the researcher classifies the data into 2 categories, namely good and less good categories using the median approach because the results of the comfort distribution data normality test show that the data is not normal. The steps taken by the author are to select the analyze >descriptive statistics > frequencies > statistics > median menu, then the median output results obtained in the comfort frequency distribution are 20, which means that if >20 is included in the good category and if <20 the data is in the less good category.

Table 9 shows the distribution of total comfort from respondents. Frequency distribution based on total comfort categorized into 2 which shows that good comfort is 64 people (80%) and poor comfort is 16 people (20%). This shows that the total comfort of nurse respondents at Grha Permata Ibu Hospital is good, which is 80% because in the work atmosphere, the comfort of the workplace and the comfort of the facilities (condition of personal protective equipment) will improve the work performance of each worker. So that every facility or work equipment that creates comfort in its use can be used by workers optimally (Anggraitya, 2017).

Table 9. Frequency distribution of nurse comfort for personal protective equipment

| Comfort | Frequency (f) | Percentage (%) |
|---|---|---|
| Not enough Good | 16 | 20% |
| Good | 64 | 80% |
| Total | 80 | 100% |

### *3.7 Overview of Supervision of Compliance with the Use of Personal Protective Equipment*

The distribution of respondent supervision is categorized into 2 categories, namely good and poor. The results obtained are collected and then analyzed in total supervision which is then categorized into good and poor supervision. The following is the distribution of the supervision description shown in table 10 below.

Table 10. Distribution of respondent answers for supervision of compliance with the use of personal protective equipment

| Description | Answer | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | STS | | TS | | RR | | S | | SS | |
| | n | % | n | % | N | % | n | % | n | % |
| Indicator Executor Supervision | | | | | | | | | | |
| Own officer supervising personal protective equipment | 0 | 0 | 0 | 0 | 6 | 7.5 | 57 | 71.3 | 17 | 21.3 |
| Supervision in a way routine | 0 | 0 | 0 | 0 | 10 | 12.5 | 53 | 66.3 | 17 | 21.3 |
| Indicator Achievement Target | | | | | | | | | | |
| With the existence of supervision of nurses ' personal protective equipment become discipline | 0 | 0 | 0 | 0 | 4 | 5.0 | 52 | 65.0 | 24 | 30.0 |
| Supervision of personal protective equipment makes it achievement safety & health | 0 | 0 | 0 | 0 | 3 | 3.8 | 48 | 60.0 | 29 | 36.3 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Indicator Lack of Waste | | | | | | | | | | |
| Supervision can reduce level error use of personal protective equipment | 0 | 0 | 0 | 0 | 2 | 2.5 | 55 | 68.8 | 23 | 28.8 |
| Supervision can control waste use of personal protective equipment | 0 | 0 | 6 | 7.5 | 13 | 16.3 | 45 | 56.3 | 16 | 20.0 |

In the normality test of data on the frequency distribution of supervision, the researcher used the Kolmogorov-Smirnov test if the p value <0.05 then the distribution is not normal and p >0.05 is a normal distribution. The steps taken by the author are to select the menu analyze > descriptive statistics > explore > plots > normality plots with test, then the output results of the significance value in the test of normality table will come out 0.000 which means p<0.05 so that the data is included in the non-normal distribution data.

In the next stage, the researcher classified the data into 2 categories, namely good and less good categories using the median approach because the results of the normality test of the supervision distribution data showed that the data was not normal. The steps taken by the author are to select the menu analyze > descriptive statistics > frequencies > statistics > median, then the median output results obtained in the supervision frequency distribution are 24, which means that if >24 is included in the good category and if <24 the data is in the less good category.

Table 11. Frequency distribution of nurse supervision of personal protective equipment

| Supervision | Frequency (f) | Percentage (%) |
|---|---|---|
| Not enough Good | 17 | 21.3% |
| Good | 63 | 78.8% |
| Total | 80 | 100% |

Table 11 shows the distribution of total supervision from respondents. Frequency distribution based on total supervision categorized into 2 which shows that good supervision is 63 people (78.8%) and poor supervision is 17 people (21.3%). This shows that the total supervision of nurse respondents at Grha Permata Ibu Hospital is good, which is 78.8%. The univariate results obtained by 78% of respondents answered that supervision of the use of personal protective equipment at Grha Ibu Hospital is included in the good category, it can be concluded that Grha Permata Ibu Hospital has carried out supervision that functions as a control over the implementation of each activity which is an effort to achieve predetermined goals. This is also in accordance with what Indragiri & Salihah (2019) stated that supervision is one of the management functions that needs to be pursued in achieving organizational goals efficiently. With good supervision, it can prevent as early as possible deviations, waste, misappropriation, obstacles, errors and failures in achieving goals and implementing organizational tasks (Indragiri & Salihah, 2019).

## 4. Conclusions

The use of PPE is the first line of defense against the transmission of nosocomial infections originating from the workplace. Compliance with the use of PPE by each nurse provides the first safety guarantee for the nurses themselves. Awareness of the importance of the use of PPE will increase the motivation of nurses in using PPE. The following conclusions can be drawn from the research that has been conducted are the characteristics of gender in nurses at Grha Permata Ibu Hospital, dominated by female nurses as many as 75 people (92.4%) while male nurses as many as 6 people (7.6%). The majority of nurses at Grha Permata Ibu Hospital completed their last education at DIII as many as 65 people (79.7%), and Bachelor Degree + Nursing as many as 16 people (20.3%). The average length of work of nurses at Grha Permata Ibu Hospital is 1-10 years, namely 55 people (68.8%). The lowest length of work as a nurse is 1 month and the highest is 25 years.

The level of knowledge regarding compliance with the use of PPE in nurses at Grha Permata Ibu Hospital is at a good level of a knowledge, namely 76.3% and poor as many as 23.8%. The most common reason for nurses at Grha Permata Ibu Hospital not to a use PPE

before taking action is because of the unavailability of PPE. The attitude towards compliance with the use of PPE among nurses at Grha Permata Ibu Hospital is in a good attitude, which is a 66.3% and less than good, which is 33%. The completeness of compliance with the use of PPE among nurses at Grha Permata Ibu Hospital is included in the good completeness, which is 57.5% and less than good, which is 42.5%. The level of comfort with the compliance with the use of PPE among nurses at Grha Permata Ibu Hospital is in a good comfort level, which is 80% and less than good, which is 20%. The level of supervision of compliance with the use of PPE among nurses at Grha Permata Ibu Hospital is in a good supervision level, which is 78.8% and less than good, which is 21.3%.

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## Biographies of Authors

**Bunga Azalea Namira,** Hospital Administration Study Program, Department of Applied Health, Universitas Indonesia, Depok, West Java, 16424, Indonesia.

- Email: bungaazalea8@gmail.com
- ORCID: N/A
- Web of Science ResearcherID: N/A
- Scopus Author ID: N/A
- Homepage: N/A

**Ari Nurfikri,** Hospital Administration Study Program, Department of Applied Health, Universitas Indonesia, Depok, West Java, 16424, Indonesia.

- Email: arinurfikri@ui.ac.id
- ORCID: 0000-0003-0522-3150
- Web of Science ResearcherID: N/A
- Scopus Author ID: N/A
- Homepage: N/A