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# NURSES' EXPERIENCE IN DOING TRIAGE MANAGEMENT IN EMERGENCY INSTALLATION DURING COVID-19 PANDEMIC IN MEDAN CITY

Comment [Reviewer11]: Unit/Room

## ABSTRACT

**Background:** *Triage* is an important link in treating critical patients, but during the Covid-19 pandemic, *triage* is not only to select and sort patients from their emergency status, but to avoid a surge in patients from the limited capacity of hospitals and medical personnel. Emergency ward nurses as the front line are faced with a lot of pressure during *triage*. In addition to the risk of transmission, nurses also face physical and mental exhaustion. The experience of emergency room nurses is needed to formulate a nursing service strategy.

**Objective:** The purpose of this study was to explore the experience of nurses in carrying out management *triage* in the Emergency Room (ER) during the Covid-19 pandemic in the city of Medan.

Comment [Reviewer12]: Triage management?

**Methods:** The type of research used in this study is a qualitative research with a phenomenological approach. Sampling using *purposive sampling technique* with the number of participants as many as 10 people. Data collection is done through in- *depth interviews*. The process of data analysis in this study used the approach of *content analysis* Colaizzi's.

**Results:** The results of the study found four main themes that describe the experience of nurses in carrying out management *triage* during the Covid-19 pandemic. The themes that emerged as a result of the research were: 1) Triage services, 2) Individual perceptions of infection/contagion Triage, 3) Nurses' burdens, and 4) Gratitude.

Comment [Reviewer13]: Please use past tense

**Conclusion:** Nurses' experience in carrying out management *triage* during the Covid-19 pandemic focused on *screening* initial, namely the assessment of acute respiratory infection (ARI), history of contact with Covid-19 patients and history of places indicated for Covid-19. Then perform *triage* secondary to sort out patients based on emergency conditions. The use of protective equipment still does not meet standards, the large number of Covid-19 cases makes the nurse's workload high, and they are afraid of being infected. The Covid-19 pandemic has formed team *triage* a solid, there is strength in the work team, and is grateful to be at the forefront of handling Covid-19.

Comment [Reviewer14]: Considering to make it concise

**Keywords:** Experience of Nurses, Triage, Covid-19 Pandemic

## INTRODUCTION

During the Covid-19 pandemic crisis, health workers are professions who are at the forefront and fight directly against Covid-19. Based on data from the Health Effects Death Index (HEDI) as of July 2020, the ratio of death to medical personnel and health workers compared to the total confirmed deaths of Covid-19 in Indonesia is one of the highest among other countries, which is 2.4%. This is due to the lack of protective equipment, the lack of good patient screening in health facilities, the fatigue of medical personnel due to the increasing number of Covid-19 patients and long working hours, as well as

psychological pressure. These things make medical personnel very vulnerable to being infected with Covid-19. Unfavorable physical and mental conditions as a result of this can eventually cause health workers to fall ill and die. In fact, medical personnel are one of the spearheads of efforts to handle Covid-19 (PB IDI, 2020).

Since the outbreak of the Covid-19 outbreak, the Covid referral hospital in Medan City has received around 400 patients per day, including around 100 patients with fever. There are many patients in the emergency room an emergency situation making triage difficult. In addition, intensive work has an adverse effect on the physical and mental health of nurses (GGTP, 2020). Ling Binfang et al found that 43.04% of doctors and 57.28% of nurses showed posttraumatic stress syndrome after treating Covid-19 patients. It is interesting to note that nurses scored higher than doctors (Thompson RN, 2020).

The Covid-19 pandemic has made the situation of the Emergency Room crowded with patients with symptoms that lead to covid-19. Many hospitals are overwhelmed to serve so many patients. Some of the patients even felt that they were not given immediate treatment. However, it should be noted that doctors and nurses are required to prioritize patients whose condition is most critical. This is a procedure for health workers because every emergency room adheres to a medical emergency triage system (Disaster & Hipgabi, 2020).

Emergency ward nurses who are on the front line are faced with a lot of pressure during triage. Triage is an important link in treating critical patients (Shavit, et.al 2020). It is very important to isolate and treat suspected cases at an early stage. During the Covid-19 pandemic, the competence of emergency room nurses directly affects the accuracy of triage management. Emerging infectious diseases such as Covid-19 cause fear for health workers of infectious infections, thus requiring high protection requirements, and the process is complicated.

The experience of emergency room nurses is needed to formulate a nursing service strategy. In this study, nurses who triage in the emergency room during the Covid-19 pandemic will be interviewed in depth to explore their experiences during the pandemic. This study can provide a basis for improving transmission prevention measures and can measure the ability of nurses to triage during the Covid-19 pandemic.

## RESEARCH METHOD

Type of research used in this study is a qualitative research with a phenomenological approach. Sampling using *purposive sampling technique* with the number of informants as many as 10 people. Data collection was carried out in the Emergency Installation Room of Dr. Pirngadi Hospital, and Hermina Hospital Medan. Data collection was carried out through semi-structured interviews, carried out with an average time of 15-20 minutes. After the researcher got all the data from the 10 informants, the researcher conducted a FGD (*Focus Group Discussion*) whose purpose was to validate the data that had been obtained from the informants, as well as clarify each answer from the informants and write down the new data obtained during the FGD on the complete transcript results.

The process of data analysis in this study used the approach of *content analysis* Colaizzi's. Research ethics considerations include *ethical clearance*, permission and recommendation from Sari Mutiara University of Indonesia and both hospitals, *informed consent* from participants, *anonymity* and *confidentiality*. This research has been approved by the Health Research Ethics Committee of the University of Muhammadiyah North Sumatera with the number 591/KEPK/FKUMSU/2021.

Comment [Reviewer15]: Untik now?

Comment [Reviewer16]: Should be past tense

Comment [Reviewer17]: Please check your tenses to convince the meaning of the research

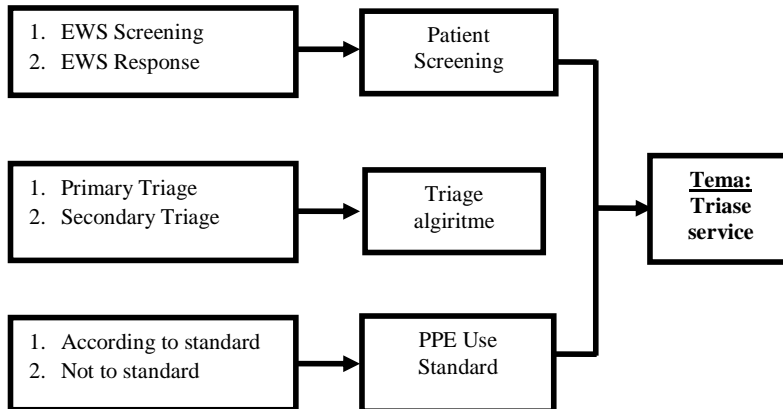
Comment [Reviewer18]: What the inclusion and exclusion criteria to select participants?

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## RESEARCH RESULTS

The results of the study found four main themes that describe the experience of nurses in carrying out management *triage* during the Covid-19 pandemic. The themes that emerged as a result of the research were: 1) Triage Services, 2) Individual perceptions of infection/contagion, 3) Nurses' burdens, and 4) Gratitude, described as follows:

### 1. Triage Services



Data found based on the results of interviews were that participants revealed that since the covid-19 pandemic, the Hospital has modified *triage* by adding *screening covid-19* which aims to separate the services to be provided. Prior to triage, patients who come are screened first. The use of the *EWS Screening COVID-19* applied is almost the same as the use of the EWS that has been carried out in health services. *The Early Warning Score (EWS)* here is used as a screening for whether a patient has a high probability of covid-19.

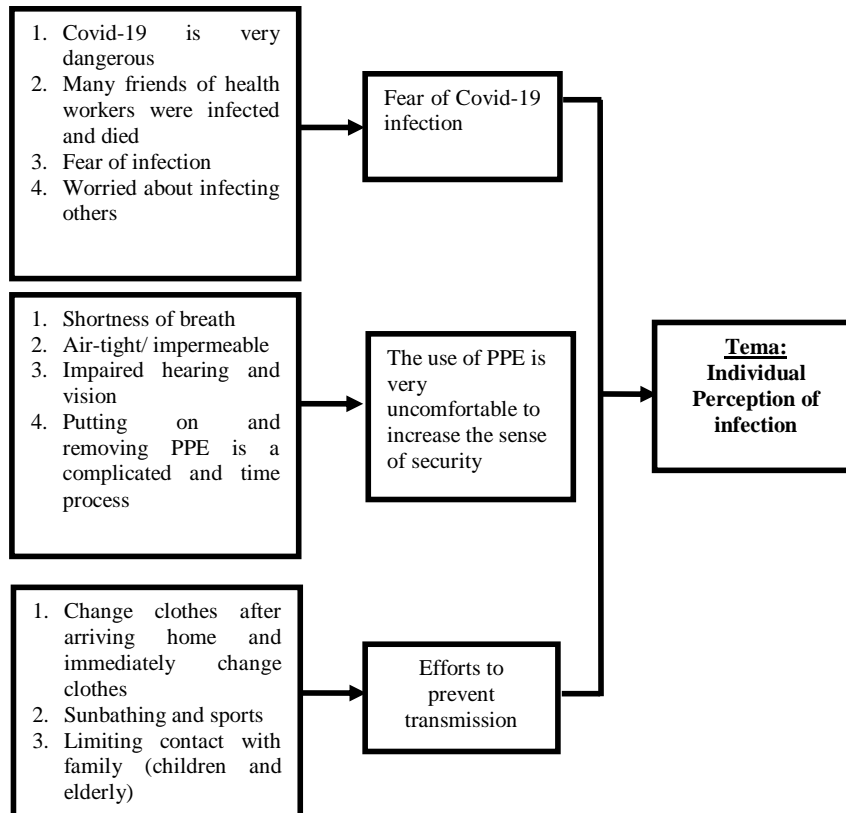
Conduct primary triage to sort patients based on history and complaints related to acute respiratory infection (ARI). Patients who come to the emergency room are assessed for acute respiratory infection complaints and travel history or history of physical contact with confirmed patients, then if there are acute respiratory infection complaints and contact/travel history, the patient is asked to be willing to be isolated in the emergency room. Then carried *triage is secondary* out to sort out patients based on emergency conditions.

The use of protective equipment still does not meet the standards, such as the stock of KN-95 masks is still very limited, so the masks must be sterilized to be used repeatedly, but some participants said that the protective equipment had met the standards.

**Comment [Reviewer110]:** Considering to complete with participants' demographic data

All theme need to be completed with participants' statements

## 2. Individual Perception of Infection



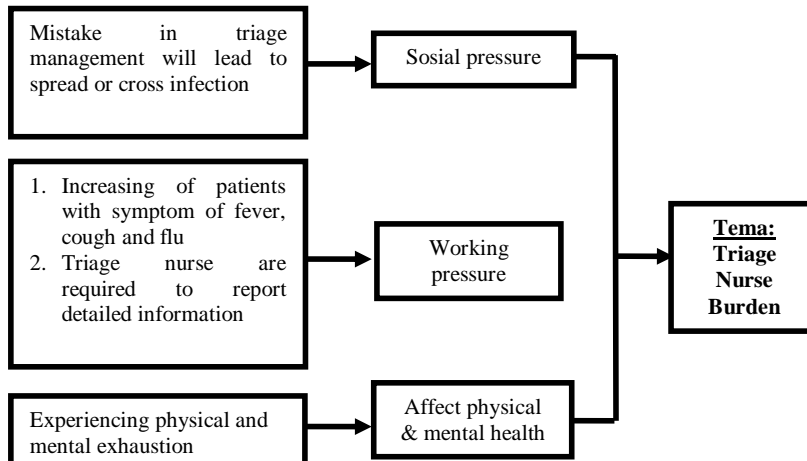
Data found based on the results of the interview is that the Participant revealed that we should not be trivial with covid-19, not to be transmitted through the air, thus accelerating the process of transmission to others. In fact, every patient who came to the emergency room was found with symptoms of fever, flu and cough, and based on the results of the examination, there were an average of 35 patients per day who were infected with Covid in the last two weeks. The number of cases makes them very worried about being infected with the virus at work, and afraid of transmitting it to others, even some of them have been infected.

Participants revealed that the use of PPE (personal protective equipment) such as hazmat greatly affected the efficiency of work/activity and resulted in easy fatigue, participants said the use of PPE was very uncomfortable, but in order to increase a sense of security, PPE must be used according to procedures.

Fear of infection makes them have to take precautions so they don't get infected with covid-19 or pass it on to others. The forms of prevention carried out by nurses were: after returning from duty, they immediately took a shower and changed clothes after arriving home, then some of them said that after returning home the night shift

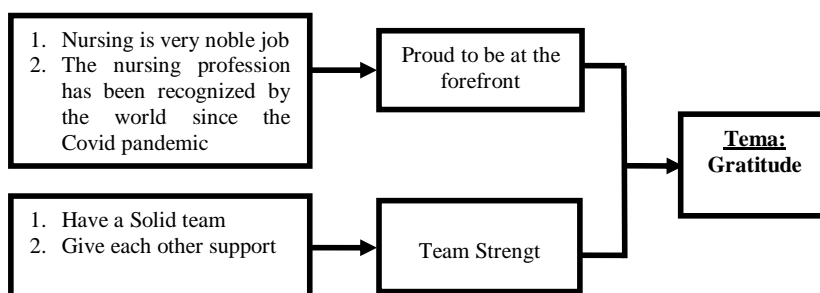
took the time to sunbathe and exercise at home, even willing to rent a house outside for months to avoid contact with elderly parents.

### 3. The Burden of the Triage Nurse



Data found based on the results of the interview was that the participant revealed that during the Covid-19 pandemic, all sectors in society paid high attention to patient care. *Triage* emergency is under the watchful eye of many, and the pressure on nurses is high. Nurses are concerned that errors in management *triage* will lead to the spread of epidemics or cross-infection. Then during the Covid-19 pandemic the number of fever patients in the ER increased significantly. Nurses *triage* are required to report detailed patient information, resulting in a high workload for nurses. Some participants revealed that they were very tired, even the large number of cases made them anxious and even experienced work stress.

### 4. Gratitude



Data found based on the results of interviews showed that during the Covid-19 pandemic the role and professionalism of nurses in Indonesia could not be underestimated. They revealed that nurses as part of the health workforce are at the forefront of handling Covid-19 around the world, and they said that the task they carry is a very noble task, because we remain loyal to caring for patients even though we are

always faced with the possibility of being exposed to Covid-19, however, they expressed their gratitude for being able to help others.

Participants revealed that they are very grateful to have a solid team, considering that services in the emergency room require immediate medical action to save lives and prevent disability. The participant also revealed that since the Covid-19 pandemic we have felt the strength in the work team, then between us we give each other a sense of caring for the infected teammates, by providing moral and material support.

## DISCUSSION

### 1. Triage Management

is an important link in treating critical patients, but during the Covid-19 pandemic triage is not only to select and sort patients from their emergency status, but to avoid a surge in patients from the limited capacity of hospitals and medical personnel, on the other hand not everyone who is tested positive for Covid-19 must be treated in a hospital, but can self-isolate at home, especially for those who do not show serious symptoms (Oman et al, 2012).

The data found based on the results of the interviews were that participants revealed that since the Covid-19 pandemic, the hospital modified *triage* by adding a sheet *screening* Covid-19 which aims to separate the services to be provided. Prior to triage, patients who come are screened first. The use of the EWS *Screening* covid-19 applied is almost the same as the use of the EWS that has been carried out in health services. *The Early Warning Score* (EWS) here is used as a screening for whether a patient has a high probability of covid-19.

The results of this study are in line with the study of Schreyer et al, (2020), to identify patients who are at risk of having covid -19, screening is carried out in screening tents outside the ER. Screening is carried out by trained health workers and uses standard PPE. Screening is carried out by measuring body temperature, asking patients to provide demographic details, symptoms and epidemiological history (travel history and contact history) (Quah et al., 2020). Then the data is documented in the screening form. The patient was then given PPE, namely a surgical mask.

The results of the interview also revealed that officers carried out primary triage to sort out patients based on history and complaints related to acute respiratory infection. Patients who come to the acute respiratory infection are assessed for acute respiratory infection complaints and travel history or history of physical contact with confirmed patients, then if there are acute respiratory infection complaints and contact/travel history, the patient is asked to be willing to be isolated in the emergency room isolation room. Then, then carried *triage* is secondary out to sort out patients based on emergency conditions.

The results of this study are in line with the CDC (2021), triage is carried out by identifying signs and symptoms of acute respiratory infection consisting of acute onset or fever  $>38^{\circ}\text{C}$  and coughing or experiencing at least 3 symptoms of covid-19 (cough, myalgia, headache, sore throat, cannot smell or taste). Then identify the epidemiological history, namely having a history of travel to areas with high cases of covid-19 or having contact with other people who suspect or confirm covid-19. Health workers assigned to triage then divide patients according to high and low suspects, placing patients in a single room with good ventilation and closed doors (Cao et al., 2020). Furthermore, a qRT-PCR and/or CT examination is carried out, the results of these examinations determine the next step in the patient.

Comment [Reviewer111]: Duplication in

Comment [Reviewer112]: duplication



The results of interviews with participants also revealed that the use of PPE still does not meet the standards, such as the stock of KN-95 masks is still very limited, so the masks must be sterilized to be used repeatedly, but some participants said that the PPE had been met according to standards.

The results of research conducted by Whiteside et al (2020) revealed that the lack of PPE supplies and the lack of consistency in the use of PPE by officers when in contact with COVID-19 patients were independent risk factors for contracting COVID-19. According to the CDC (2020), the use of PPE for health workers consisting of face shields or protective glasses, gloves, gowns, N95 respiratory protection or higher respirators is recommended, but surgical masks are still acceptable if N95 supplies are limited (Cao et al., 2020). While the PPE provided for patients is surgical masks (Silvagni et al., 2020).

According to WHO (2014), logistics management is needed to provide the right resources, at the right time, in the right quantity and in the right place to meet the increasing demands of hospitals during emergencies and to do so without compromising the normal functioning of hospitals. Logistics needs are not only in the field of medical equipment and medicines, but also for internal logistics, such as personal protective equipment (PPE). In addition, human resource management must also ensure the safety and security of human resources by providing PPE according to standards (Quah et al., 2020).

## **2. Individual Perceptions of infection**

very fast transmission of the corona virus and the significant increase in the number of cases that continue to increase from day to day have caused health workers, especially nurses who treat covid -19 patients in hospitals, to have a high risk of being infected. This makes nurses in carrying out their duties have mental health problems, one of which is a feeling of fear. Fear occurs because it is related to transmission and spread to family members, colleagues or other colleagues as well as to the surrounding community (Astin, A., & Paembonan, A, 2021).

The data found based on the results of the interview is that the participant revealed that we should not be trivial with covid-19, considering that it is transmitted through the air, thus accelerating the process of transmission to others. In fact, every patient who came to the ER was found with symptoms of fever, flu and cough, and based on the results of the examination, there were an average of 35 patients per day who were infected with Covid in the last two weeks. The number of cases makes them very worried about being infected with the virus at work, and afraid of transmitting it to others, even some of them have been infected.

The results of this study are supported by research (Lu et al., 2020), where the prevalence of nurse fear is in the range of 26.7% to 36.2%. The results showed that nurses reported feelings of fear experienced during the covid-19 pandemic which were categorized into moderate (n = 564, 28%) and high (n = 1273, 36.2%). Feelings of fear occur due to an increase in the incidence of covid-19, the workload carried out by nurses also increases proportionally to 1.5 to 2 times normal working hours.

Hu et al., (2020) revealed that nurses as frontline health workers in carrying out their duties also experience feelings of fear because they have to work in isolation rooms, worry about being infected, lack of personal protective equipment during work, pandemics that can never be controlled, the results unsatisfactory work in caring for Covid-19 patients, and feeling lonely because of being isolated from family members or their surroundings. In addition, the fear experienced is related to infection or death of family members or patients

as well as nosocomial spread to people around during the covid-19 pandemic (Hu et al., 2020).

The results of interviews with participants also revealed that their fear of infection made them have to take preventive measures so as not to be infected with COVID-19, namely by continuing to use PPE (personal protective equipment). Participants also revealed that the use of PPE is very uncomfortable, but in order to increase a sense of security, PPE must be used according to procedures. Other forms of prevention carried out by nurses were: after returning from duty, they immediately took a shower and changed clothes after arriving home, then some of them said that after returning home the night shift took the time to sunbathe and exercise at home.

The results of this study are in line with research Xu et.al's (2021) in Shenzhen China which was conducted on emergency room nurses, the results of interviews during the study stated that all nurses tried to adapt to the use of complete PPE, even though it was very uncomfortable but they felt protected because it could minimize transmission to friends and family, then they are more confident meeting with family at home.

The results of this study are supported by the statement of Savoia, E., et al (2020) Health workers who know the threats/dangers while on duty will be aware that it is important to use masks or complete PPE. The use of PPE is important to work safely during the covid-19 pandemic. Janah & Martiana also argue that a person will not change his behavior when he feels the consequences are still tolerable. Individual perceptions of the seriousness of the disease that will be suffered, encourage a person to take preventive action. The more serious the illness that will be suffered, the more aware a person will be to take preventive measures (Janah and T. Martiana, 2021).

The use of PPE for health workers can prevent transmission and minimize the dangers of covid-19 and create a sense of security for health workers. However, the use of PPE in the long term turns out to have side effects. Savoia's research states that compliance in the use of PPE can cause physical burdens related to the long duration of using masks, uncomfortable respirators, wearing and removing PPE. Therefore, health care facilities need to take preventive measures and change working conditions during the pandemic, such as short work shifts, adequate supply of PPE, appropriate mask sizes, and reducing the duration of PPE use. Therefore, in its application, health workers must be able to follow the COVID-19 health protocol in accordance with the established PPE standard guidelines (Savoia, E., et al, 2020).

### **3. Burden of Nurses Triage**

During the Covid-19 pandemic, nurses have greater responsibilities than before Covid-19. Since the Covid-19 pandemic, the workload of health workers, especially nurses, has increased drastically. In addition, nurses must also provide optimal services related to infection prevention and control measures for the safety of themselves and the community.

The data found based on the results of the interview is that the participant revealed that during the Covid-19 pandemic, all sectors in society paid high attention to patient care. Emergency triage is under the watchful eye of many, and the pressure on nurses is high. Nurses are concerned that errors in triage management will lead to the spread of epidemics or cross-infection. Then during the Covid-19 pandemic the number of fever patients in the ER increased significantly. Triage nurses are required to report detailed patient information, resulting in a high workload for nurses. some participants revealed that they were very tired, even the large number of cases of covid-19 made them anxious and even experienced work stress. In addition, the ER also handles other critical illnesses, the

workload has increased drastically. At the time of the interview, all nurses revealed that their workload was very large and the available human resources were very insufficient.

The results of this study are in line with research Xu et al's (2021) in Shenzhen China which was conducted on emergency room nurses, the results of interviews during the study stated that excessive workload during the Covid-19 pandemic caused physical and mental fatigue so that it affected the quality and efficiency of triage. In addition to this research, Chen Junhua et al (2020) also supports this study, where the interviewed participants mentioned that it seems unfair that other clinical departments in hospitals with fewer patients affected by the epidemic have sufficient human resources. So it is necessary to evaluate human resource management during the pandemic.

Excessive workload can cause physical and mental fatigue that affects the quality and efficiency of *triage*. Therefore, human resource management is needed to ensure that the ER has human resources with adequate numbers and competencies so that they can provide quality health services. Changes made in human resource management in the ER during the covid-19 pandemic include increasing numbers, arrangements and training. The addition of the number of human resources needs to be done to meet the needs of human resources due to the increase in the number of patients. The arrangements in question are in the form of working area arrangements and work shift arrangements to avoid accumulation in one area (Permatasari, DA (2021).

#### **4. Gratitude**

The Covid-19 pandemic provides a real picture of how nursing contributes in responding to the pandemic situation. Nurses are at the forefront made a significant contribution in providing health services in handling Covid-19.

The data found based on the results of interviews were that participants revealed that during the Covid-19 pandemic the role and professionalism of nurses in Indonesia could not be underestimated. They revealed that nurses were part of the workforce. Health is at the forefront of handling Covid-19 around the world. And they said that the task they carried out was a very noble task, because we remained faithful to care for patients even though we were always faced with the possibility of being exposed to Covid-19, even though they conveyed gratitude for being able to help others.

Rizki Aprilia's opinion (2020), during her profession as a nurse, she felt the importance of feeling grateful every day, grateful to be able to care for patients who have to struggle to be healthy or even struggle to stay alive. Besides being grateful, being a nurse teaches the meaning of sincerity, the sincerity of caring for someone who is nobody we don't even know. Nurses try to sincerely and sincerely care for patients and hope that they can return to health and gather with their families. Aware of the enormous and noble role of nurses in the healing process, this profession is very much needed anywhere and around the world. As a nurse who loves her job, it takes sacrifice, hard work, passion and willingness to learn to develop herself.

Interviewees also revealed that they are very grateful to have a solid team, considering that services in the ER require immediate medical action to save lives and prevent disability. The participant also revealed that since the Covid-19 pandemic we have felt the strength in the work team, then between us we give each other a sense of caring for the infected teammates, by providing moral and material support.

The results of this study are in line with study Xu et al's (2021) in Shenzhen China, where 8 interviewed nurses reported that they could feel team strength and care from superiors during the pandemic. Spaulding et al (2020) from their research show that during

the pandemic period, support from superiors is very important and can increase the morale of front-line medical staff. Based on this, he suggested that nursing managers should provide support and praise, and can mobilize the spirit of nurses.

## CONCLUSION

In this study, 10 nurses *triage* who worked in the Emergency Room (ER) during the Covid-19 pandemic were interviewed. It was found that the work experience of nurses in performing management is *triage* described as follows: The hospital has modified *triage* by adding a sheet *screening* Covid-19, nurses perform primary triage to sort patients based on history and complaints related to acute respiratory infection (ARI). Then performed *triage* was secondary to sort out patients based on emergency conditions. The use of personal equipment infection (PPE) is still not up to standard, such as the stock of N-95 masks is still very limited, so the masks must be sterilized to be used repeatedly. The large number of Covid-19 cases makes the nurse's workload high, then the fear of Covid-19 infection in the workplace causes fears of transmitting it to others. Nurses' concerns about infection make them have to continue to use full PPE, even though it is uncomfortable, but in order to increase a sense of security. The Covid-19 pandemic has formed team *triage* a solid, feels the strength in the work team, and is grateful to be at the fore front of handling Covid-19.

## SUGGESTION

1. **Human Resources Management** needs to ensure that the emergency department has human resources with adequate numbers and competencies so that they can provide quality health services by making changes to the emergency room during the Covid-19 pandemic, including: increasing the number of human resources, scheduling and training. The addition of the number of human resources needs to be done to meet the needs of human resources considering the increasing number of patients.
2. **Nursing Management**, must provide support and praise and can mobilize the spirit of nurses who have contributed significantly in providing health services in handling Covid-19.
3. **Nurses** must be able to provide emergency services professionally, be able to consider *triage* in providing services, and continue to learn in developing themselves.
4. **Infrastructure**, it is necessary to provide services according to patient conditions and reduce crowds in the ER and prevent cross-contamination of Covid-19 in the ER, it is necessary to change the infrastructure for the expansion of the ER area. Infrastructure changes include making screening tents, setting up emergency room designs and building *fever clinics*.
5. **Logistics**, providing the right logistic resources, at the right time, in the right amount and in the right place to meet the increasing demand for hospitals during emergencies. Logistics needs are not only in the field of medical equipment and medicines, but also for internal logistics, such as personal protective equipment (PPE).

## ACKNOWLEDGEMENTS

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# NURSES' EXPERIENCE IN DOING TRIAGE MANAGEMENT IN EMERGENCY INSTALLATION DURING COVID-19 PANDEMIC IN MEDAN CITY

## ABSTRACT

**Background:** *Triage* is an important link in treating critical patients, but during the Covid-19 pandemic, *triage* is not only to select and sort patients from their emergency status, but to avoid a surge in patients from the limited capacity of hospitals and medical personnel. Emergency ward nurses as the front line are faced with a lot of pressure during *triage*. In addition to the risk of transmission, nurses also face physical and mental exhaustion. The experience of emergency room nurses is needed to formulate a nursing service strategy.

**Objective:** The purpose of this study was to explore the experience of nurses in carrying out management *triage* in the Emergency Room (ER) during the Covid-19 pandemic in the city of Medan.

**Methods:** The type of research used in this study is a qualitative research with a phenomenological approach. Sampling using *purposive sampling technique* with the number of participants as many as 10 people. Data collection is done through in- *depth interviews*. The process of data analysis in this study used the approach of *content analysis* Colaizzi's.

**Results:** The results of the study found four main themes that describe the experience of nurses in carrying out management *triage* during the Covid-19 pandemic. The themes that emerged as a result of the research were: 1) Triage services, 2) Individual perceptions of infection/contagion Triage, 3) Nurses' burdens, and 4) Gratitude.

**Conclusion:** Nurses' experience in carrying out management *triage* during the Covid-19 pandemic focused on *screening* initial, namely the assessment of acute respiratory infection (ARI), history of contact with Covid-19 patients and history of places indicated for Covid-19. Then perform *triage* secondary to sort out patients based on emergency conditions. These of protective equipment still does not meet standards, the large number of Covid-19 cases makes the nurse's workload high, and they are afraid of being infected. The Covid-19 pandemic has formed team *triage* a solid, there is strength in the work team, and is grateful to be at the forefront of handling Covid-19.

**Keywords:** Experience of Nurses, Triage, Covid-19 Pandemic

## INTRODUCTION

During the Covid-19 pandemic crisis, health workers are professions who are at the forefront and fight directly against Covid-19. Based on data from the Health Effects Death Index (HEDI) as of July 2020, the ratio of death to medical personnel and health workers compared to the total confirmed deaths of Covid-19 in Indonesia is one of the highest among other countries, which is 2.4%. This is due to the lack of protective equipment, the lack of good patient screening in health facilities, the fatigue of medical personnel due to the increasing number of Covid-19 patients and long working hours, as well as

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"Triage management during COVID-19 in Emergency Department: A phenomenology among nurses in Medan"

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psychological pressure. These things make medical personnel very vulnerable to being infected with Covid-19. Unfavorable physical and mental conditions as a result of this can eventually cause health workers to fall ill and die. In fact, medical personnel are one of the spearheads of efforts to handle Covid-19 (PB IDI, 2020).

Since the outbreak of the Covid-19 outbreak, the Covid referral hospital in Medan City has received around 400 patients per day, including around 100 patients with fever. There are many patients in the emergency room an emergency situation making triage difficult. In addition, intensive work has an adverse effect on the physical and mental health of nurses (GGTP, 2020). Ling Binfang et al found that 43.04% of doctors and 57.28% of nurses showed posttraumatic stress syndrome after treating Covid-19 patients. It is interesting to note that nurses scored higher than doctors (Thompson RN, 2020).

The Covid-19 pandemic has made the situation of the Emergency Room crowded with patients with symptoms that lead to covid-19. Many hospitals are overwhelmed to serve so many patients. Some of the patients even felt that they were not given immediate treatment. However, it should be noted that doctors and nurses are required to prioritize patients whose condition is most critical. This is a procedure for health workers because every emergency room adheres to a medical emergency triage system (Disaster & Hippabi, 2020).

Emergency ward nurses who are on the front line are faced with a lot of pressure during *triage*. *Triage* is an important link in treating critical patients (Shavit, et.al 2020). It is very important to isolate and treat suspected cases at an early stage. During the Covid-19 pandemic, the competence of emergency room nurses directly affects the accuracy of triage management. Emerging infectious diseases such as Covid-19 cause fear for health workers of infectious infections, thus requiring high protection requirements, and the process is complicated.

The experience of emergency room nurses is needed to formulate a nursing service strategy. In this study, nurses who triage in the emergency room during the Covid-19 pandemic will be interviewed in depth to explore their experiences during the pandemic. This study can provide a basis for improving transmission prevention measures and can measure the ability of nurses to triage during the Covid-19 pandemic.

## RESEARCH METHOD

Type of research used in this study is a qualitative research with a phenomenological approach. Sampling using *purposive sampling technique* with the number of informants as many as 10 people. Data collection was carried out in the Emergency Installation Room of Dr. Pirngadi Hospital, and Hermina Hospital Medan. Data collection was carried out through semi-structured interviews, carried out with an average time of 15-20 minutes. After the researcher got all the data from the 10 informants, the researcher conducted a FGD (*Focus Group Discussion*) whose purpose was to validate the data that had been obtained from the informants, as well as clarify each answer from the informants and write down the new data obtained during the FGD on the complete transcript results.

The process of data analysis in this study used the approach of *content analysis* Colaizzi's. Research ethics considerations include *ethical clearance*, permission and recommendation from Sari Mutiara University of Indonesia and both hospitals, *informed consent* from participants, *anonymity* and *confidentiality*. This research has been approved by the Health Research Ethics Committee of the University of Muhammadiyah North Sumatera with the number 591/KEPK/FKUMSU/2021.

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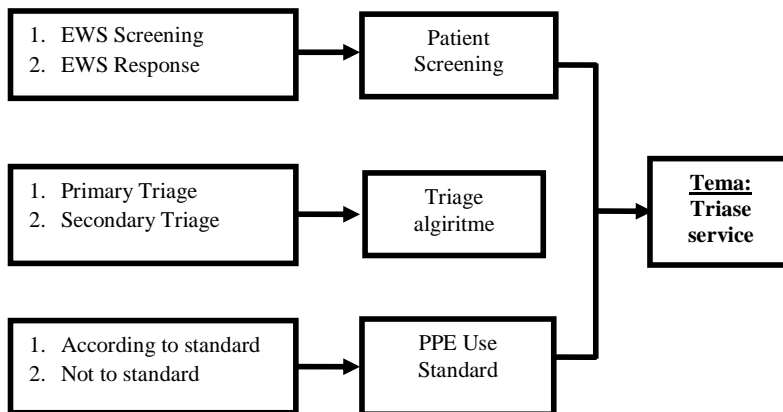
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## RESEARCH RESULTS

The results of the study found four main themes that describe the experience of nurses in carrying out management *triage* during the Covid-19 pandemic. The themes that emerged as a result of the research were: 1) Triage Services, 2) Individual perceptions of infection/contagion, 3) Nurses' burdens, and 4) Gratitude, described as follows:

### 1. Triage Services

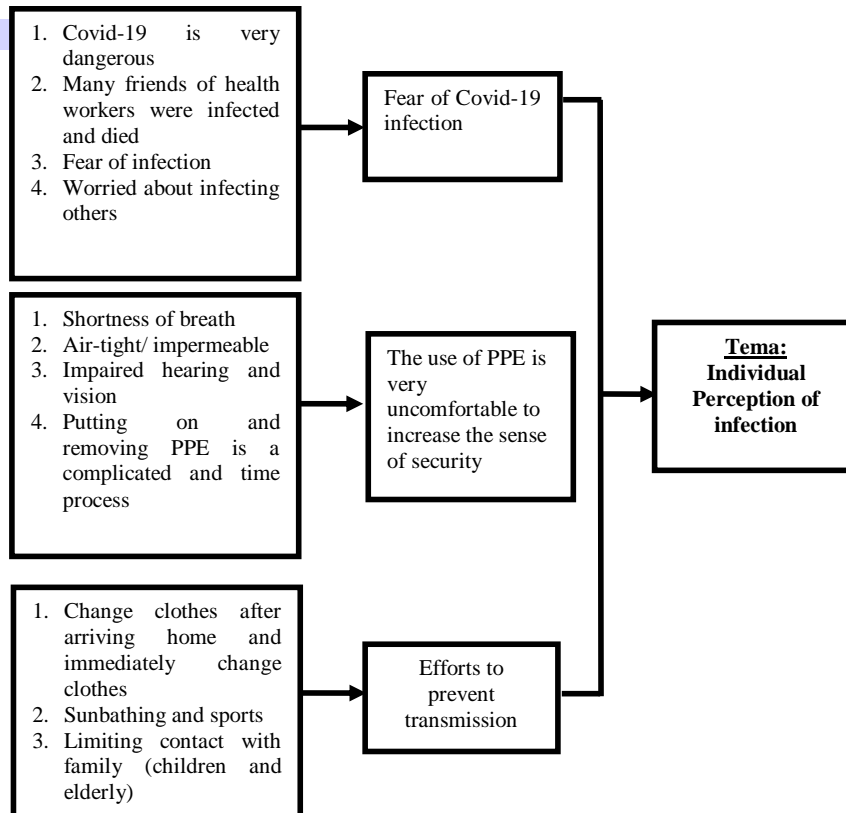


Data found based on the results of interviews were that participants revealed that since the covid-19 pandemic, the Hospital has modified *triage* by adding asheet *screening covid-19* which aims to separate the services to be provided. Prior to triage, patients who come are screened first. The use of the *EWS Screening COVID-19* applied is almost the same as the use of the EWS that has been carried out in health services. *The Early Warning Score (EWS)* here is used as a screening for whether a patient has a high probability of covid-19.

Conduct primary triage to sort patients based on history and complaints related to acute respiratory infection (ARI). Patients who come to the emergency room are assessed for acute respiratory infection complaints and travel history or history of physical contact with confirmed patients, then if there are acute respiratory infection complaints and contact/travel history, the patient is asked to be willing to be isolated in the emergency room. Then carried *triage is* secondary out to sort out patients based on emergency conditions.

The use of protective equipment still does not meet the standards, such as the stock of KN-95 masks is still very limited, so the masks must be sterilized to be used repeatedly, but some participants said that the protective equipment had met the standards.

## 2. Individual Perception of Infection



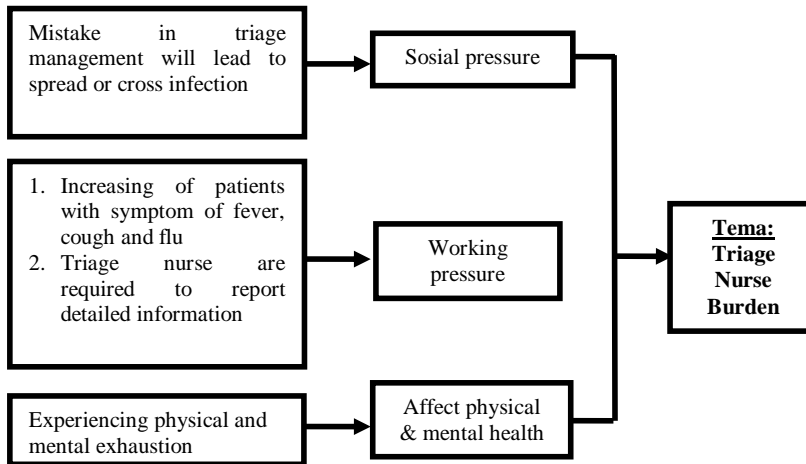
Data found based on the results of the interview is that the Participant revealed that we should not be trivial with covid-19, not to be transmitted through the air, thus accelerating the process of transmission to others. In fact, every patient who came to the emergency room was found with symptoms of fever, flu and cough, and based on the results of the examination, there were an average of 35 patients per day who were infected with Covid in the last two weeks. The number of cases makes them very worried about being infected with the virus at work, and afraid of transmitting it to others, even some of them have been infected.

Participants revealed that the use of PPE (personal protective equipment) such as hazmat greatly affected the efficiency of work/activity and resulted in easy fatigue, participants said the use of PPE was very uncomfortable, but in order to increase a sense of security, PPE must be used according to procedures.

Fear of infection makes them have to take precautions so they don't get infected with covid-19 or pass it on to others. The forms of prevention carried out by nurses were: after returning from duty, they immediately took a shower and changed clothes after arriving home, then some of them said that after returning home the night shift

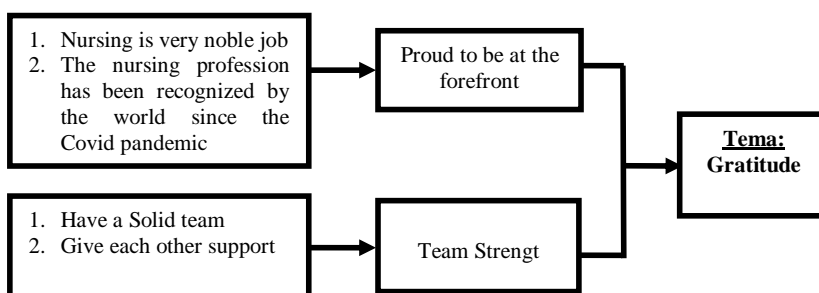
took the time to sunbathe and exercise at home, even willing to rent a house outside for months to avoid contact with elderly parents.

### 3. The Burden of the Triage Nurse



Data found based on the results of the interview was that the participant revealed that during the Covid-19 pandemic, all sectors in society paid high attention to patient care. *Triage* emergency is under the watchful eye of many, and the pressure on nurses is high. Nurses are concerned that errors in management *triage* will lead to the spread of epidemics or cross-infection. Then during the Covid-19 pandemic the number of fever patients in the ER increased significantly. Nurses *triage* are required to report detailed patient information, resulting in a high workload for nurses. Some participants revealed that they were very tired, even the large number of cases made them anxious and even experienced work stress.

### 4. Gratitude



Data found based on the results of interviews showed that during the Covid-19 pandemic the role and professionalism of nurses in Indonesia could not be underestimated. They revealed that nurses as part of the health workforce are at the forefront of handling Covid-19 around the world, and they said that the task they carry is a very noble task, because we remain loyal to caring for patients even though we are

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always faced with the possibility of being exposed to Covid-19, however, they expressed their gratitude for being able to help others.

Participants revealed that they are very grateful to have a solid team, considering that services in the emergency room require immediate medical action to save lives and prevent disability. The participant also revealed that since the Covid-19 pandemic we have felt the strength in the work team, then between us we give each other a sense of caring for the infected teammates, by providing moral and material support.

## **DISCUSSION**

### **1. Triage Management**

is an important link in treating critical patients, but during the Covid-19 pandemic triage is not only to select and sort patients from their emergency status, but to avoid a surge in patients from the limited capacity of hospitals and medical personnel, on the other hand not everyone who is tested positive for Covid-19 must be treated in a hospital, but can self-isolate at home, especially for those who do not show serious symptoms (Oman et al, 2012).

The data found based on the results of the interviews were that participants revealed that since the Covid-19 pandemic, the hospital modified *triage* by adding *asheet screening* Covid-19 which aims to separate the services to be provided. Prior to triage, patients who come are screened first. The use of the EWS *Screening* covid-19 applied is almost the same as the use of the EWS that has been carried out in health services. *The Early Warning Score* (EWS) here is used as a screening for whether a patient has a high probability of covid-19.

The results of this study are in line with the study of Schreyer et al, (2020), to identify patients who are at risk of having covid -19, screening is carried out in screening tents outside the ER. Screening is carried out by trained health workers and uses standard PPE. Screening is carried out by measuring body temperature, asking patients to provide demographic details, symptoms and epidemiological history (travel history and contact history) (Quah et al., 2020). Then the data is documented in the screening form. The patient was then given PPE, namely a surgical mask.

The results of the interview also revealed that officers carried out primary triage to sort out patients based on history and complaints related to acute respiratory infection. Patients who come to the acute respiratory infection are assessed for acute respiratory infection complaints and travel history or history of physical contact with confirmed patients, then if there are acute respiratory infection complaints and contact/travel history, the patient is asked to be willing to be isolated in the emergency room isolation room. Then, then carried *triage is* secondary out to sort out patients based on emergency conditions.

The results of this study are in line with the CDC (2021), triage is carried out by identifying signs and symptoms of acute respiratory infection consisting of acute onset or fever  $>38^{\circ}\text{C}$  and coughing or experiencing at least 3 symptoms of covid-19 (cough, myalgia, headache, sore throat, cannot smell or taste). Then identify the epidemiological history, namely having a history of travel to areas with high cases of covid-19 or having contact with other people who suspect or confirm covid-19. Health workers assigned to triage then divide patients according to high and low suspects, placing patients in a single room with good ventilation and closed doors (Cao et al., 2020). Furthermore, a qRT-PCR and/or CT examination is carried out, the results of these examinations determine the next step in the patient.

The results of interviews with participants also revealed that the use of PPE still does not meet the standards, such as the stock of KN-95 masks is still very limited, so the masks must be sterilized to be used repeatedly, but some participants said that the PPE had been met according to standards.

The results of research conducted by Whiteside et al (2020) revealed that the lack of PPE supplies and the lack of consistency in the use of PPE by officers when in contact with COVID-19 patients were independent risk factors for contracting COVID-19. According to the CDC (2020), the use of PPE for health workers consisting of face shields or protective glasses, gloves, gowns, N95 respiratory protection or higher respirators is recommended, but surgical masks are still acceptable if N95 supplies are limited (Cao et al., 2020). While the PPE provided for patients is surgical masks (Silvagni et al., 2020).

According to WHO (2014), logistics management is needed to provide the right resources, at the right time, in the right quantity and in the right place to meet the increasing demands of hospitals during emergencies and to do so without compromising the normal functioning of hospitals. Logistics needs are not only in the field of medical equipment and medicines, but also for internal logistics, such as personal protective equipment (PPE). In addition, human resource management must also ensure the safety and security of human resources by providing PPE according to standards (Quah et al., 2020).

## **2. Individual Perceptions of infection**

very fast transmission of the corona virus and the significant increase in the number of cases that continue to increase from day to day have caused health workers, especially nurses who treat covid -19 patients in hospitals, to have a high risk of being infected. This makes nurses in carrying out their duties have mental health problems, one of which is a feeling of fear. Fear occurs because it is related to transmission and spread to family members, colleagues or other colleagues as well as to the surrounding community (Astin, A., & Paembonan, A, 2021).

The data found based on the results of the interview is that the participant revealed that we should not be trivial with covid-19, considering that it is transmitted through the air, thus accelerating the process of transmission to others. In fact, every patient who came to the ER was found with symptoms of fever, flu and cough, and based on the results of the examination, there were an average of 35 patients per day who were infected with Covid in the last two weeks. The number of cases makes them very worried about being infected with the virus at work, and afraid of transmitting it to others, even some of them have been infected.

The results of this study are supported by research (Lu et al., 2020), where the prevalence of nurse fear is in the range of 26.7% to 36.2%. The results showed that nurses reported feelings of fear experienced during the covid-19 pandemic which were categorized into moderate (n = 564, 28%) and high (n = 1273, 36.2%). Feelings of fear occur due to an increase in the incidence of covid-19, the workload carried out by nurses also increases proportionally to 1.5 to 2 times normal working hours.

Hu et al., (2020) revealed that nurses as frontline health workers in carrying out their duties also experience feelings of fear because they have to work in isolation rooms, worry about being infected, lack of personal protective equipment during work, pandemics that can never be controlled, the results unsatisfactory work in caring for Covid-19 patients, and feeling lonely because of being isolated from family members or their surroundings. In addition, the fear experienced is related to infection or death of family members or patients

as well as nosocomial spread to people around during the covid-19 pandemic (Hu et al., 2020).

The results of interviews with participants also revealed that their fear of infection made them have to take preventive measures so as not to be infected with COVID-19, namely by continuing to use PPE (personal protective equipment). Participants also revealed that the use of PPE is very uncomfortable, but in order to increase a sense of security, PPE must be used according to procedures. Other forms of prevention carried out by nurses were: after returning from duty, they immediately took a shower and changed clothes after arriving home, then some of them said that after returning home the night shift took the time to sunbathe and exercise at home.

The results of this study are in line with research Xu et.al's (2021) in Shenzhen China which was conducted on emergency room nurses, the results of interviews during the study stated that all nurses tried to adapt to the use of complete PPE, even though it was very uncomfortable but they felt protected because it could minimize transmission to friends and family, then they are more confident meeting with family at home.

The results of this study are supported by the statement of Savoia, E., et al (2020) Health workers who know the threats/dangers while on duty will be aware that it is important to use masks or complete PPE. The use of PPE is important to work safely during the covid-19 pandemic. Janah & Martiana also argue that a person will not change his behavior when he feels the consequences are still tolerable. Individual perceptions of the seriousness of the disease that will be suffered, encourage a person to take preventive action. The more serious the illness that will be suffered, the more aware a person will be to take preventive measures (Janah and T. Martiana, 2021).

The use of PPE for health workers can prevent transmission and minimize the dangers of covid-19 and create a sense of security for health workers. However, the use of PPE in the long term turns out to have side effects. Savoia's research states that compliance in the use of PPE can cause physical burdens related to the long duration of using masks, uncomfortable respirators, wearing and removing PPE. Therefore, health care facilities need to take preventive measures and change working conditions during the pandemic, such as short work shifts, adequate supply of PPE, appropriate mask sizes, and reducing the duration of PPE use. Therefore, in its application, health workers must be able to follow the COVID-19 health protocol in accordance with the established PPE standard guidelines (Savoia, E., et al, 2020).

### **3. Burden of Nurses Triage**

During the Covid-19 pandemic, nurses have greater responsibilities than before Covid-19. Since the Covid-19 pandemic, the workload of health workers, especially nurses, has increased drastically. In addition, nurses must also provide optimal services related to infection prevention and control measures for the safety of themselves and the community.

The data found based on the results of the interview is that the participant revealed that during the Covid-19 pandemic, all sectors in society paid high attention to patient care. Emergency triage is under the watchful eye of many, and the pressure on nurses is high. Nurses are concerned that errors in triage management will lead to the spread of epidemics or cross-infection. Then during the Covid-19 pandemic the number of fever patients in the ER increased significantly. Triage nurses are required to report detailed patient information, resulting in a high workload for nurses. some participants revealed that they were very tired, even the large number of cases of covid-19 made them anxious and even experienced work stress. In addition, the ER also handles other critical illnesses, the

workload has increased drastically. At the time of the interview, all nurses revealed that their workload was very large and the available human resources were very insufficient.

The results of this study are in line with research Xu et al's (2021) in Shenzhen China which was conducted on emergency room nurses, the results of interviews during the study stated that excessive workload during the Covid-19 pandemic caused physical and mental fatigue so that it affected the quality and efficiency of triage. In addition to this research, Chen Junhua et al (2020) also supports this study, where the interviewed participants mentioned that it seems unfair that other clinical departments in hospitals with fewer patients affected by the epidemic have sufficient human resources. So it is necessary to evaluate human resource management during the pandemic.

Excessive workload can cause physical and mental fatigue that affects the quality and efficiency of *triage*. Therefore, human resource management is needed to ensure that the ER has human resources with adequate numbers and competencies so that they can provide quality health services. Changes made in human resource management in the ER during the covid-19 pandemic include increasing numbers, arrangements and training. The addition of the number of human resources needs to be done to meet the needs of human resources due to the increase in the number of patients. The arrangements in question are in the form of working area arrangements and work shift arrangements to avoid accumulation in one area (Permatasari, DA (2021).

#### **4. Gratitude**

The Covid-19 pandemic provides a real picture of how nursing contributes in responding to the pandemic situation. Nurses are at the forefront made a significant contribution in providing health services in handling Covid-19.

The data found based on the results of interviews were that participants revealed that during the Covid-19 pandemic the role and professionalism of nurses in Indonesia could not be underestimated. They revealed that nurses were part of the workforce. Health is at the forefront of handling Covid-19 around the world. And they said that the task they carried out was a very noble task, because we remained faithful to care for patients even though we were always faced with the possibility of being exposed to Covid-19, even though they conveyed gratitude for being able to help others.

Rizki Aprilia's opinion (2020), during her profession as a nurse, she felt the importance of feeling grateful every day, grateful to be able to care for patients who have to struggle to be healthy or even struggle to stay alive. Besides being grateful, being a nurse teaches the meaning of sincerity, the sincerity of caring for someone who is nobody we don't even know. Nurses try to sincerely and sincerely care for patients and hope that they can return to health and gather with their families. Aware of the enormous and noble role of nurses in the healing process, this profession is very much needed anywhere and around the world. As a nurse who loves her job, it takes sacrifice, hard work, passion and willingness to learn to develop herself.

Interviewees also revealed that they are very grateful to have a solid team, considering that services in the ER require immediate medical action to save lives and prevent disability. The participant also revealed that since the Covid-19 pandemic we have felt the strength in the work team, then between us we give each other a sense of caring for the infected teammates, by providing moral and material support.

The results of this study are in line with study Xu et al's (2021) in Shenzhen China, where 8 interviewed nurses reported that they could feel team strength and care from superiors during the pandemic. Spaulding et al (2020) from their research show that during

the pandemic period, support from superiors is very important and can increase the morale of front-line medical staff. Based on this, he suggested that nursing managers should provide support and praise, and can mobilize the spirit of nurses.

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Comment [A19]: Limitation of the study??

## CONCLUSION

In this study, 10 nurses *triage* who worked in the Emergency Room (ER) during the Covid-19 pandemic were interviewed. It was found that the work experience of nurses in performing management is *triage* described as follows: The hospital has modified *triage* by adding a sheet *screening* Covid-19, nurses perform primary triage to sort patients based on history and complaints related to acute respiratory infection (ARI). Then a performed *triage* was secondary to sort out patients based on emergency conditions. The use of personal equipment infection (PPE) is still not up to standard, such as the stock of N-95 masks is still very limited, so the masks must be sterilized to be used repeatedly. The large number of Covid-19 cases makes the nurse's workload high, then the fear of Covid-19 infection in the workplace causes fears of transmitting it to others. Nurses' concerns about infection make them have to continue to use full PPE, even though it is uncomfortable, but in order to increase a sense of security. The Covid-19 pandemic has formed team *triage* a solid, feels the strength in the work team, and is grateful to be at the fore front of handling Covid-19.

## SUGGESTION

1. **Human Resources Management** needs to ensure that the emergency department has human resources with adequate numbers and competencies so that they can provide quality health services by making changes to the emergency room during the Covid-19 pandemic, including: increasing the number of human resources, scheduling and training. The addition of the number of human resources needs to be done to meet the needs of human resources considering the increasing number of patients.
2. **Nursing Management**, must provide support and praise and can mobilize the spirit of nurses who have contributed significantly in providing health services in handling Covid-19.
3. **Nurses** must be able to provide emergency services professionally, be able to consider *triage* in providing services, and continue to learn in developing themselves.
4. **Infrastructure**, it is necessary to provide services according to patient conditions and reduce crowds in the ER and prevent cross-contamination of Covid-19 in the ER, it is necessary to change the infrastructure for the expansion of the ER area. Infrastructure changes include making screening tents, setting up emergency room designs and building *fever clinics*.
5. **Logistics**, providing the right logistic resources, at the right time, in the right amount and in the right place to meet the increasing demand for hospitals during emergencies. Logistics needs are not only in the field of medical equipment and medicines, but also for internal logistics, such as personal protective equipment (PPE).

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