

JKG

JURNAL KEPERAWATAN GLOBAL



E-ISSN: 2580-5916

ISSN: 2528-0120

Vol. 6, No. 2

Issue. December 2021

Page. 55-127

 <https://doi.org/10.37341/jkg.v0i0>





Original Research

Insightful The Precious Reflection Of Volunteer Nurses Caring For Covid-19 Patients

Ira Kusumawaty^{1*}, Yunike², Gunardi Pome³¹Department of Mental Health Nursing, Politeknik Kesehatan Kemenkes Palembang, Indonesia²Department of Nursing Pediatric, Politeknik Kesehatan Kemenkes Palembang, Indonesia³Department of Nursing Gerontology, Politeknik Kesehatan Kemenkes Palembang, Indonesia

ABSTRACT

Background: The shock of the Covid-19 transmission forced the implementation of learning methods by volunteer nurses during the academic period of learning. Nurse volunteers face the complexities of dealing with Covid-19 as the backbone of saving the unavoidable Covid-19 victims. However, the exploration of the valuable experience of volunteer nurses is still minimal, even though the information provided has implications for efforts to improve the health care system during a pandemic. This study reports on the experience of volunteer nurses in hospitals in treating Covid-19 patients.

Methods: This qualitative research uses a phenomenological approach. Purposive sampling technique was used to determine the sample, the exploratory process involved seven volunteer nurses and two head nurses through in-depth interviews and observations to obtain an in-depth narrative about the volunteer nurse experience. This research was conducted in two hospitals located in South Sumatera Province. The process of data analysis was carried out using the Colaizzi's method. The formulation of the theme begins with the writing of the transcript, the formulation of coding, categories, sub-themes until finally the formulation of the theme. The ethical clearance has been submitted prior to the conduct of the study and has been declared to have passed the ethical review.

Results: Based on the results of Colaizzi's analysis, three themes have been formulated, namely the driving factors for volunteering, preparation as a volunteer nurse and events caring for Covid-19 patients.

Conclusion: This research implies that it is necessary to modify the volunteer nurses in interacting and communicating with patients and contacting the families of volunteer nurses to increase the retention of volunteer nurses.

Cite this as: Kusumawaty, I., Yunike, Y., & Pome, G. (2021). Insightful The Precious Reflection Of Volunteer Nurses Caring For Covid-19 Patients. (*JKG*) *Jurnal Keperawatan Global*, 55-66. <https://doi.org/10.37341/jkg.v0i0.316>

ARTICLE HISTORY

Received : September 22th, 2021Accepted : December 30th, 2021

KEYWORDS

covid-19, reflection, volunteer nurses;

CONTACT

Ira Kusumawaty

irakusumawaty@poltekkespalembang.ac.idJurusan Keperawatan Poltekkes
Kemenkes Palembang, Jln. Jend.
Sudirman Km. 3,5 Palembang,
Indonesia.

INTRODUCTION

The Covid-19 pandemic created confusion and uncertainty among patients in the health system. The World Health Organization has declared the Covid-19 outbreak a health emergency at the global level (He et al., 2021). The coronavirus pandemic as the cause of Covid-19 has still not subsided in Indonesia. The high accumulation of positive cases and death rates in Indonesia fluctuates in various remote areas (Kementerian Sosial, 2020; Lazarus et al., 2021). However, the number of available nurses is still lacking. Especially during this Covid-19 period, Indonesia needs much medical personnel, including nurses, because the number of patients who must assist is far more significant during the pandemic (Kementerian Sosial, 2020).

Many challenges need to be addressed in handling the problem of the coronavirus pandemic. The need to increase the number of volunteer nurses is one of the challenges faced by Indonesia. The second challenge is optimizing the provision of knowledge for them about Covid-19 handling standards (Biddle & Gray, 2020; Gan et al., 2020; Gresh et al., 2021; Rupley et al., 2020). Implementing various plans to fight the coronavirus is even more difficult because of the performance of large-scale social restrictions. Furthermore, the number of victims infected with the coronavirus or Covid-19 has increased by almost a thousand people per day (Alomar et al., 2021; Follmann et al., 2021); it is imperative to increase volunteer nurses.

Based on a systematic review, obtained information that the motivation of volunteers occupies a powerful position in maintaining positive volunteer behavior and long-term retention (Chacón et al., 2017). Volunteer motivations are a critical factor in both volunteer recruitment and the continuation of volunteer activity (Alomar et al., 2021; Kpanake et al., 2019; Poortaghi et al., 2021; Same et al., 2020). Moral values were the most important motivations among volunteers (Alomar et al., 2021; Kpanake et al., 2019). Efforts to encourage health students and interns to volunteer and providing those with appropriate educational programs are recommended. It is important to explore the experiences of volunteer nurses, as they are as part of the health care system and their caring contribution will affect the quality of health services.

In China, the conditions experienced by volunteer nurses, firstly, appear tired, discomfort and helplessness due to the high intensity of work and concern for patients and their family members are the beginning of the emergence of negative emotions. Second, overcoming or managing oneself includes psychological and life coping, altruistic implementation, group support, and cognitive rationality. Third, growing affection and increasing gratitude, greater responsibility, professional spirit, and the ability to do self-reflection.

In the end, positive emotions gradually develop and the emergence of negative emotions (Sun et al., 2020). The results of previous studies provide a psychological picture of the Covid-19 disaster volunteers experiencing mild anxiety, mild depression, and mild stress (Agustin et al., 2020). However, no research explores qualitatively specifically for nurses related to the reasons for volunteering, the preparations that must be passed, and volunteers' needs when caring for Covid-19 patients.

MATERIALS AND METHOD

This qualitative research applies a phenomenological approach to identify the experiences of volunteer nurses when assigned to treat Covid-19 patients. Purposive sampling technique was used to determine the participants were seven volunteer nurses who were coded P1-P7, and two head nurses. The inclusion criteria of volunteer nurses

are who underwent online during academic learning, have experience working in a hospital at least three months and were willing to become participants, then the exclusion criteria were being in a state of illness.

The in-depth interviews with observations were carried out during in-depth interviews and comments in the head nurse's room. Researchers ask questions using questions in the in-depth interview guide, and sometimes new questions arise based on answers given by previous participants. The questions asked are not always appropriate and not sequentially as stated in the in-depth interview guidelines.

Interviews in this study only brought notes containing the main topics to be asked. The interview method used is an unstructured interview that follows the flow of the subject's conversation, but interview guidelines are used as a reference. At the time of conducting the interview, the researcher must describe these general guidelines and adapt them to the conditions of the participants during the interview. This study also used this interview to focus on the experience of aspects of the subject's life, carried out from February-April 2021.

The validity of the data was tested by detailed observation, triangulation, peer debriefing, comparing with the results of other studies and member checking. Data analysis is systematically searching, and compiling data obtained from interviews, field notes and documentation so that they are easy to understand and can inform the findings to others. After completed the entire data collection process, the researcher analyzed it using a Colaizzi's analysis.

This analysis begins with organizing the data, breaking it down into units, synthesizing it, arranging it into a pattern, choosing which components are essential and what will be studied, and making conclusions. Researchers collected participant data, including age, length of work, year of graduation, and gender. Researchers listened to the results of repeated interviews and made transcripts. Furthermore, researcher reads the transcript many times so that the meaning can be formulated by marking important participant statements. Followed by grouping the data to be expressed as a category. Based on these categories, the researchers grouped them into sub-themes and main themes.

The following is an in-depth research interview guide why are you willing to volunteer, how was your experience when treating Covid-19 patients, would you please tell me, what is the essential thing to prepare before volunteering, do you have any concerns, what actions are taken when anxiety is felt, what problems must be faced when treating COVID-19 patients, what kind of support do you need when you volunteer, and what lessons have benefited you personally and professionally. The study protocol has obtained ethical approval from the Health Polytechnic Ethics Committee of the Palembang Ministry of Health, number 950/KEPK/Adm1/I/2021.

RESULTS

This study describes the experiences of 7 volunteer nurses aged between 21-24 years with minimum 3 months of work experience, unmarried, five female participants and two male participants. The data analysis process was carried out immediately after the in-depth interview, so that it could immediately be seen the similarity of meaning to the information conveyed. When a similarity of meaning was found between participants, the in-depth interview was stopped, and the similarity emerged after interviewing seven participants.

Determination of 7 participants was considered based on data saturation and determination of saturation was carried out simultaneously between the theme formation process and data collection. When the information disclosed by the participants is almost the same or similar, the in-depth interview process is terminated. Participants came from different two hospitals in South Sumatera Province, Indonesia.

All volunteer nurses are placed in hospitals that provide care for Covid-19 patients. Two head nurses were also participants in the study, as an effort to triangulate the method, aged 35 and 40 years old, female and married. All participants have agreed with the formulation of the resulting theme. Each theme presented to participants is accompanied by an interview quote, according to the words spoken by the participants.

The following table shows the process of forming a theme, starting from interview quotes, sub-themes, and themes.

Table 1. Theme Formulation

Theme	Sub theme	Interview quotes
The driving factors for volunteering	Humanitarian reasons	I am concerned because the number of patients is increasing day by day. (P2)
		My primary motivation is being driven by a sense of humanity and also wanting to help medical personnel. (P4)
		We carry out humanitarian duties, if not from us, who else? (P5)
		For me, being a volunteer starts with a calling from the soul, being a Covid-19 volunteer is a noble and challenging job. (P1)
		With a high spirit to help others, it is not considered burdensome. (P7)
	Feeling concerned	I feel sad about the many victims of covid-19 who fell, many died. (P6)
		I'm sad to see the number of victims increase. (P1)
		I am aware of the threat of the coronavirus, which can strike at any time. Moreover, in carrying out duties as a volunteer, he often interacts with positive Covid-19 patients. (P3)
	Professional responsibility	I'm sad to see the number of victims increase. (P4)
		For me, volunteering in this pandemic situation is a call from the state that must be done, especially for me, who is a nurse. (P5)
I am very burdened when I see the increasing need for medical personnel and health workers (P2)		
To devote herself as a nurse to help the government and her colleagues who have become volunteers. (P4)		
		Being a nurse during this pandemic is an act of heroism for the nation; my soul feels called to help fellow nursing professions. (P1)
		I want to help Indonesia to overcome this covid-19 pandemic and also to add experience and insight.

Theme	Sub theme	Interview quotes	
		(P3) Help break the chain of the spread of Covid-19. As nurses, we must obey the oath of the nursing profession (P6)	
Preparation as a volunteer nurse	Physical readiness	It is necessary to practice wearing complete personal protective equipment because it is an experience of its own after being in an isolation room. (P1)	
		I was also required to wear personal protective equipment and enter the isolation room; this is a challenging experience, so it must be taught. (P3)	
		The practice of wearing personal protective equipment requires extra patience because wearing a mask can also reduce the oxygen that enters the body. (P2)	
		Previously, I only saw medical personnel wearing personal protective equipment in videos. (P5)	
			Can't breathe freely, can't eat and drink for a long time until you have to hold back on urinating. (P6)
	Psychological readiness	Psychologically we must be ready and strong in various situations. (P2)	
		We hear news of disease transmission constantly; the virus is easy to transmit, we are terrified of being infected. (P3)	
		I felt apprehensive the first time I treated a patient, was afraid of it, and still had some doubts. (P5)	
		I am not yet ready to treat patients, but we have to do it even though we are worried about being prepared. (P6)	
	Readiness of understanding about personal protective equipment	There are no worries in dealing with Covid-19 patients, considering that we have been equipped with Personal Protective Equipment. (P1)	
Convince yourself that you will not be infected if you continue to wear complete Personal Protective Equipment when interacting with patients. (P2)			
Although I often work in isolation rooms, to be honest I'm not too afraid of getting infected. The important thing is to continue to wear complete personal protective equipment and comply with health protocols. (P6)			
		Don't panic when dealing with Covid-19 patients, just relax and enjoy and happy to carry out their duties as volunteers, on the other hand, there are those who judge it because of money and pay. (P4)	
	Volunteer administration readiness	I went through a number of stages such as administrative selection, online interviews, and health screening. (P4)	

Theme	Sub theme	Interview quotes
		I continued to register, then I did a Medical Check Up, and attended training. (P2)
		I follow the procedure given by the hospital in need. (P7)
Events caring for Covid-19 patients	lack of communication interaction	there are limitations to interacting with patients. (P2)
		wearing this protective equipment makes it difficult to speak and assess the patient's condition. (P3)
		Collecting conditions with patients is very difficult because you can't talk directly. (P5)
	getting closer to God	maybe this condition makes me more obedient to worship. (P1)
		Even though I'm afraid of being infected, I believe in the greatness of God. (P3)
		After all, everything is God's destiny, I have to believe in it. (P5)
	Getting the most beautiful impression	getting the experience of caring is a memorable experience. (P7)
		feel valuable if you can take care of patients, help during the pandemic. (P2)
		It's very moving to treat Covid patients, there are a lot of uncertainties to deal with. (P6)
	The importance of environmental support, deep hope	the resilience of the accompanying family strengthens me in caring for patients. (P4)
My family's support really strengthens me so that I can continue to care for patients. (P6)		
I am grateful that now my husband, children, parents understand my work. (P7)		
need environmental assistance in helping patients during this pandemic (P3)		
		I hope that understanding support for our emotional state will get better. (P5)

DISCUSSION

The problem of Covid-19 has had a tremendous impact on all aspects of human life, and many lives have fallen. The high number of Covid-19 victims indicates an imbalance in the number of health workers and the severity of the Covid-19 problem that threatens human life. The following discussion is presented based on the themes that have been formed and based on research results, implications for nursing care during the Covid-19 pandemic in hospitals.

Theme 1: The driving factors for volunteering (humanitarian reasons, feeling concerned, professional responsibility). The majority of participants made humanity the main reason for becoming a volunteer nurse. In keeping with Watson's theory of value and deep respect for the wonders and mysteries of life, Watson recognizes the spiritual dimension of life and believes in the internal power of the healing and healing process.

Volunteers are a tremendous resource in Indonesia by considering the total population (Kementerian Sosial, 2020). Humanitarian workers and volunteers work

based on humanity, neutrality, impartiality and independence (Biddle & Gray, 2020; Poortaghi et al., 2021; Sun et al., 2020; Turtle et al., 2015). Volunteer motivation is a critical determinant in recruiting volunteers and the sustainability of volunteer activities. The most important motivation is the moral values of the volunteers. The training is an effort to encourage volunteer nurses as a recommendation for preparation materials.

A volunteer nurse is an individual or assembly of nurses proficient and caring to function voluntarily and truthfully in disaster management efforts. Volunteers required competence, fast ability and precision, prioritizing actions, synchronizing, being efficient and effective, responsibility, establishing affiliations, encouraging, and non-discriminate, as long as a volunteer does not spread belief, advocating gender equality and respect local wisdom (Kementerian Sosial, 2020).

The willingness of healthcare professionals to arrange services on the backbones of an outbreak is stimulated by many considerations. It dismisses also fluctuate by epidemic and segment. Psychological stress, epidemic above experience, safety involvement at the period of contagion (Khalid et al., 2016; Oh et al., 2020; Turtle et al., 2015).

Another study stated that the experience of disaster volunteers included having the motivation to help according to their field of expertise and the feedback facilities they received during and after carrying out their volunteer duties (Kpanake et al., 2019; Lazarus et al., 2021; Victoria, 2020). Professional responsibility is also an essential component in determining the motivation of volunteer nurses to be willing to carry out this profession. Motivation is a force contained in humans that causes, directs, and organizes behavior. This behavior arises because of the encouragement of internal factors and external factors.

Behavior is seen as a reaction or response to incitement. Performance occurs since motivation or drive directs individuals to accomplish by the interests or goals to be achieved. Without encouragement, there will be no force that requires the individual to a mechanism for the emergence of behavior. The need activates the drive because the market generates a purpose, and this drive ultimately starts or contributes to behavioral mechanisms. Likewise, the agency that occurs is that there are participants. The profession's sense of humanity, concern, and responsibility motivated participants to become volunteer nurses.

Theme 2: Preparation as a Covid-19 volunteer nurse (physical, psychological readiness, use of personal protective equipment and administration). Disaster conditions will provide various physical and psychological impacts for each individual, including disaster volunteers. Disaster volunteers are a vulnerable group who can experience physical and psychological problems. Various Covid-19 disaster management activities have caused different psychological responses for health workers who treat patients and volunteers on duty.

Some of the psychological reactions are negative emotions such as fatigue, discomfort, and helplessness caused by high-intensity work, fear and anxiety, and concern for patients and family members. Individual coping includes psychological and life adjustments, selfless actions, team support, and rational cognition. Negative psychological responses develop alongside positive psychological responses (Sun et al., 2020).

The increased workload of volunteer nurses due to an unpredictable increase in the number of sufferers also occurred in participants, especially since they were unfamiliar with personal protective equipment. Therefore, the attendance of volunteer

nurses is very imperative throughout the pandemic. Hiring health workers to provide services during epidemic outbreaks of infectious diseases remains challenging to accomplish.

The investigation in the UK conveyed that only 1.7% of health care experts had volunteered to work in West Africa because of the Ebola outbreak. In particular, the shared facilities obtained by volunteer health professionals include receiving training, availability of adequate care (Draper & Jenkins, 2017; Turtle et al., 2015), perceived professional obligations, support from hospital administration, financial compensation (Khalid et al., 2016), protection of adequate equipment, good staff, and family support (Jacob et al., 2021). Inadequate information, fears of being infected and concerns of their families are the most cited reasons for nurses not to help on the front lines (Solomon et al., 2014; Turtle et al., 2015).

Psychological problems experienced by a disaster volunteer is a sense of stress during activities as a volunteer. Disaster volunteers also convey the fear of death to produce cognitive preparation, positive and negative emotions (Sun et al., 2020; Travers et al., 2020). The service performed by volunteer nurses like heroes is based on a sincere intention to sacrifice accompanied by a high sense of responsibility and deep concern.

Volunteer nurses are very supportive of services at hospitals to maintain the resilience and continuity of COVID-19 services for medical personnel at the forefront.

The high humanitarian spirit of nurses throughout Indonesia to join hands in fighting Covid-19 at the forefront. After completing the training, the nurses work in hospitals where Covid-19 patients are treated with accommodation attention.

Theme 3: Events caring for Covid-19 patients (lack of communication interaction, getting closer to God, getting the most beautiful impression, the importance of environmental support, deep hope). Caring for Covid-19 patients by volunteer nurses is an ability to provide attention and action to other people (patients) by assisting, supporting, respecting, and empathizing with physical care to avoid something terrible from happening, supported by aspects of knowledge, patience, hope and courage. For caring to be given, caring moments and interactions between nurses and patients are needed. Many factors determine the success of caring, including intense communication and interaction.

In the Covid-19 condition, because the potential for disease transmission is immense, interaction and communication between volunteer nurses and patients must be minimized and still adhere to health protocols. Caring moments are simple human-to-human interactions. This interaction has the potential to create a moment of transcendence (healing). The moment of concern the nurse refers to the time of acting according to the agreement with the patient. The moment of interacting allows the nurse and patient to decide on the condition in which to care.

Moments of caring are transpersonal; each party feels the interaction with each other to the spiritual level, thus penetrating place and time, opening up the possibility of healing and deep interactions between humans, not just physical interactions. Family support contributes significantly in encouraging the quality of caring for Covid-19 volunteer nurses. Participants need family support when caring for patients and are aware of the risks carried by participants. Psychological problems experienced by volunteer nurses come from within themselves and because of the low family support for volunteer activities (Sun et al., 2020; Turtle et al., 2015).

Family support is considered an added strength for participants to feel confident in their abilities to help Covid-19 patients. Happiness is felt when the patient has shown his recovery. However, fear of being infected was felt when the participants took care of the patient for the first time. It is essential to equip volunteer nurses with cognitive aspects, positive and negative emotions (Belfroid et al., 2018; Lazarus et al., 2021; Oh et al., 2020; Same et al., 2020).

Various conditions experienced by Covid-19 patients have made nurse volunteers closer to God, as stated by participants. The situation changes very quickly, and she surrenders to Allah for the treatment results given to the patient. The participants' spiritual closeness was felt, including the desire to help the patient as optimally as possible, expecting the patient to be physically healthy and spiritually. According to experts, religiosity or spirituality underlies a person in carrying out voluntary activities (Alomar et al., 2021; Kpanake et al., 2019). By treating COVID-19 patients, volunteer nurses are getting closer to God, and the level of sincerity and humility is getting higher.

CONCLUSION

The hospital service system must strengthen the initiation of volunteer nurses to help victims of COVID-19 based on humanity, concern, and professional responsibility. Family support is an integral component to enhancing the intention to help others. Volunteers must optimally prepare physical, psychological and administrative protection so that sincerity to help is reflected in every assistance given, ultimately handing over the treatment results to God Almighty.

Optimizing in mobilizing volunteer nurses for support projects during the Covid-19 pandemic must face many challenges. The development of the rapidly changing situation requires hospital leadership to modify and update practice guidelines. This condition makes the project flexible to adapt to the changes quickly in structure and needs. Greater attention is needed for volunteers to provide comfort, peace of mind in serving patients. The hospital's ability to provide volunteer nurses allows rapid service to critically ill patients with strict supervision.

ACKNOWLEDGEMENT

We would like to thank the Health Polytechnic of the Palembang Ministry of Health for their support. Many thanks to the participants who were involved in this research.

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Original Research

Factors Affected Recovery Time Of Residents With Covid 19

Firdawsyi Nuzula^{1*}, Maulida Nurfazriah Oktaviana²

^{1,2} Community Nursing Department, Diploma of Nursing, Akademi Kesehatan Rustida, Indonesia

ABSTRACT

Background: *The massive spread of Covid-19 and made it a pandemic causing a lot of fear and anxiety among people around the world. Covid-19 has been a global disaster which has a high level of spread and severity since it is a contagious disease. The severity of this disease ranges from asymptomatic to severe with general symptoms of fever and cough and causing acute respiratory distress syndrome, especially in the elderly and people with comorbidity. Family support helps patients to meet their basic needs and can help to increase the spirit to recover which is one of the factors that accelerate the patient's recovery process.*

Methods: *Population in this study consisted 660 residents who had confirmed Covid-19 and 109 samples were taken with purposive sampling technique appropriately to inclusion criteria. Independents variables in this study consisted of history of co-morbidities, knowledge, family support and motivation to recover. While the dependent variable is the healing time of Covid-19. The instrument of this study used a questionnaire sheet. This is a correlational study with cross sectional quantitative analytic.*

Results: *Bivariate analytic show that only family support variable has significant results with p value <0,05. Family support is the determinant factors with p value of 0,0017 compared with other factors such as comorbid, knowledge and motivation.*

Conclusion: *It can be conclude that family support is the determinant of recovery time of people affected by Covid-19. The most needed support for healing in the form of being sufficient and meeting the needs during illness, both physically and psychologically.*

ARTICLE HISTORY

Received : September 14th, 2021

Accepted : February 3th, 2022

KEYWORDS

comorbid, covid 19, family support, knowledge and motivation to get health;

CONTACT

Firdawsyi Nuzula

nuzulafirdawsyi@gmail.com

Community Nursing Department,
Diploma of Nursing, Akademi
Kesehatan Rustida, Indonesia

Cite this as: Nuzula, F., & Oktaviana, M. (2022). Factors Affected Recovery Time Of Residents With Covid 19. (*JKG*) *Jurnal Keperawatan Global*, 67-78. <https://doi.org/10.37341/jkg.v0i0.304>

INTRODUCTION

Indonesia and the whole world are currently struggling and trying to fight and control the spread of SARS (Severe acute respiratory distress syndrome) disease which has emerged with a new category that is the main cause of COVID 19 (Darsini, Aryani & Nia, 2020). Covid-19 outbreak is a phenomenon that grabs the attention of people all over the world in every level of society because of its massive spread that caused fear and anxiety (Saputra & Simbolon, 2020). This outbreak is become a pandemic disaster

with an alarming level of spread and severity because the virus is highly contagious disease (Winugroho et al., 2021). The severity level of the disease range from asymptomatic to severe with general symptoms as fever and cough and causing acute respiratory distress syndrome, especially in the elderly and people with comorbidity (Microbiol et al., 2021).

The increase of confirmed case of Covid-19 is growing past and it spread all over the world. Indonesia is the country with the highest contagious level of Covid-19 in Southeast Asia. The total number of confirmed case at March 31 2021 reached 170.051.718 case with the mortality rate at 3.540.437 and the case fatality rate at 2,1% in 222 affected countries and 150 community transmission countries (WHO, 2021). The increase of confirmed case has been significant since the case 01 and 02 were announced in March 2020 (Rahman, Utami, & Nadhilah, 2020). Covid-19 cases in Indonesia has spread throughout the provinces with data on confirmed case reaching 50.262 cases and 66% are in Java (Findyartini et al, 2021).

The government of Republic of Indonesia reported that as of May 31, 2021 there were 1,821,703 people confirmed for Covid-19, 50.578 people are deaths with a CFR of 2,8% and 1.669.119 patients who have been declared cured (Kemenkes RI, 2020). East Java Province reported that on June 1st 2020 there were about 155.006 confirmed case of death and 141,839 cases of recovery, while in Banyuwangi the confirmed case reached 6,496 cases with a death rate of 667 cases and 5,728 cases are cured (Dinkes Prov. Jatim, 2021). In working area of Tegalsari Health Centre there were about 671 confirmed case and the cured case reach 660 case and the death are 11 cases (Satgas Covid-19, 2021).

Transmission of Covid-19 virus occurs from person to person through respiratory droplets with a contact distance of about 2 meters or by touching an object that has been exposed to the virus and the sticks to the nose or mouth (Alvita, Hartini, & Winarsih, 2021). Severe acute respiratory syndrome form coronavirus2 (SARSCoV-2) which spreads through aerosol in a closed environment, especially in a room with a humidity temperature regulated by air conditioning or in a room with closed ventilation. At this condition the virus will survive longer, which is 16 hours, and it make a higher risk of transmitting the virus (Carbone et al., 2020).

High case fatality rates in subjects hospitalized with Covid-19 with critical illness and in patients with underlying comorbid conditions, bad habit and patients length of stay in mechanical ventilation are other factors reported to be associated with length of recovery (Garg et al., 2021). The manifestation of this disease is range from asymptomatic or flu like syndrome to a life threatening complication since it is not only affected the respiratory tract only but also affected the digestive, nervous and cardiovascular system (Tali et al., 2021).

Considering the risk of severe outcome in in Covid-19 patients with comorbidities such as hypertention, DM and higher BMI, especially for those who are severely obese on any treatment plan is very important. Overweight and obesity are risk factors for invasive mechanical ventilation, and obesity is a risk factor for hospitalization and death, especially among adults, because obesity is a recognized risk factor for the severity of Covid-19 (Huang et al., 2020). It is associated with chronic inflammation that impairs immune and thrombogenic responses to pathogens and impaired lung function caused by being overweight.

Obesity is a common metabolic disease (Kompaniyets et al., 2021). Another thing that to be know is knowledge. Knowledge is a fact, the thruth of information obtained

through experience or learning and can be known or realized by someone. A person does not have a basis in making decisions and determining actions to problems faced without knowledge. A person's knowledge regarding the Covid-19 disease, both treatment and care, is expected to be a motivation to speed up the healing period (Yunus & Zakaria, 2021).

Family has an important role in preventing the transmission of the Covid-19 because family is the closest person who will providing support to each family member and family is the most appropriate one to promote a clean and healthy behavior (Alvita et al., 2021). Motivation or patient's inner support in another important factor affecting the recovery time (Bau, 2019). The outbreak is also has an impact on changes in people's live pshyologically such as how they thinking and understanding the information of health and illness, emotional changes such as anxiety and physiological changes (Zalukhu & Rantung, 2020). An effort to keep balance between emotion and emotion is to seek a comprehensive understanding of oneself and others and to balance fear and acceptance of unsafe situations by responding positively (Rifani & Rahadi, 2021).

Recovery time of confirmed Covid-19 residents varies greatly, influenced by many factors. There are some whose healing is classified as very fast, which is less than 1 week, but there are some who have long Covid, which is more than 4 weeks and sometimes still have signs of residual symptoms even though they are free from the virus. Tegalsari Health Center has experienced a rapid spike in cases and has formed a new cluster that is shocking.

Therefore, researchers are interested in finding out what factors most influence the recovery time of residents affected by Covid-19 in the Tegalsari Health Center working area. This study aims to identify the factors that affect the recovery time of residents affected by Covid-19 in the working area of the Tegalsari Health Center. It is hoped that this research can provide benefits in the form of additional knowledge for residents affected by Covid-19 about the factors that affect the healing time of residents affected by Covid-19.

MATERIALS AND METHOD

This is an observational study conducted with cross sectional design with quantitative approach, which the observation of the dependent variables and independent variables is carried out at the same time (Sastroasmoro & Ismail, 2015). The independents variables in this study consisted of history of co-morbidities, knowledge, family support and motivation to recover where it isi suspected that these factors affect the healing of these disease. While dependent variable is the healing time of Covid-19.

The target population in this study are the residents affected by Covid-19 and recorded in Tegalsari Health Center data. Population in this study consisted 660 residents who had confirmed Covid-19 and 109 samples were taken with purposive sampling method by determining inclusion and exclusion criteria. The inclusion criteria of this study were all residents affected by Covid-19 in the period from March to May 2021, with an age range of 25 to 50 years and registered at the Tegalsari Health Center. As for the exclusion criteria, they are those who have been complete vaccinated against Covid-19 and someone who gets a re-attack.

There were about 109 respondents who have previously passed the ethical feasibility test with ethical clearance number 571/KEPK/STIKES-BWI. Respondents

who took part in this study filled out a questionnaire that had been tested for validity and reliability and the results of data collection from the questionnaire were then tabulated. Analysis of the data in this study used three analyzes, namely univariate analysis to explain the characteristics of each variable, both independent variables in the form of history of comorbidities, BMI, knowledge, family support, anxiety and motivation to recover with the length of recovery time for residents affected by Covid-19. Respondents fill out the questionnaire directly (offline).

Comorbid variables were obtained by asking a history of previous diseases which were one of DM, HT, obesity, asthma and other chronic diseases, while the BMI data uses the WHO formula benchmark with the classification of thin, normal, overweight and obese obtained from the results of questionnaire that have been filled out by respondents. Knowledge is measured by using a questionnaire about basic knowledge of covid 19 which is assessed with good, sufficient and poor knowledge indicators, likewise family support is measured by a questionnaire that is assessed based on low, medium and high criteria and motivation to recover is classified into several categories, namely high, medium and low.

By looking at the frequency distribution each variable and in the bivariate analysis using the chi-square test to determine or identify the relationship of the independent variable with the healing time of residents affected by Covid-19 using $\alpha = 0.05$ and 95% Confident Interval (CI), if p value $>$ there is no relationship, if the value of p means that there is a relationship and multivariate analysis, the test used is logistic regression with the provision that only variables that have a p value <0.05 (in bivariable analysis) are carried out by logistic regression.

RESULTS

The results of calculation of the characteristics of respondents affecting the recovery time of residents affected by covid 19 can be seen in the master table at table 1.

Table1. Respondets's Characteristic affecting recovery time of residents affected of Covid 19

Respondent's Characteristic		Frequency	Percentage
Gender	Female	58	53.2%
	Male	51	46.8%
Total		109	100%
Blood type	A	41	37.6%
	O	31	28.4%
	B	26	23.8%
	AB	11	10.2%
Total		109	100%
Age	46-65 years old	44	40.4%
	26-45 years old	63	57.8%
	12-25 years old	2	1.8%
Total		109	100%
Occupation	Helath worker	29	26.6%
	Enterpreneur	63	57.8%
	Housewife	1	9%
	Farmer	5	4.6%
	Government employee	11	10.1%

Respondent's Characteristic	Frequency	Percentage
Total	109	100%

Based on the table above it can be seen that 58 respondents (53,3%) are female, 41 respondents (37,6%) is having A Blood type, 63 respondents (57,8%) are 24- 45 years old and 63 (57,8%) respondents are working as an entrepreneurs and followed by the health workers for 26,6%.

Table 2. Anlysis Factors affecting the recovery time of people affected by Covid 19

Variable		Category		p-value
		Less than 2 weeks n (%)	More than 2 weeks n (%)	
Comorbidities	Absent	86 (78.9)	12 (11.1)	0.728
	Present	8 (7.3)	3 (2.7)	
Knowledge	Lack	33 (30.1)	2 (1.9)	0.310
	Sufficient	31 (28.4)	6 (5.6)	
	Good	31 (28.4)	6 (5.6)	
Family support	Low	3 (2.7)	3 (2.7)	0.017
	Medium	59 (54.1)	6 (5.6)	
	High	33 (30.1)	5 (4.6)	
Motivation to recover	Medium	78 (71.6)	14 (12.8)	0.085
	High	17 (15.6)	0 (0)	

According to the table 2 it can be concluded that the variable of family support is the most dominant factors among the others which are comorbid, knowledge and motivation to recover. Based on bivariate analysis, it was found that only the family support variable had significant value which has p value of 0,017. Thus, among other variables, it can be concluded that the family support is the most dominant factor affecting recovery time of residents affected by covid 19.

DISCUSSION

Statistical anaylisis show that 78,9% respondents with no comorbid are recover within 14 days, while 7,3% respondent with comorbid are recover in more than 14 days and there were only 2,7% with history of comorbid are recover in more than two days. While the p value of 0.728 higher than $\alpha = 0,05$. It can be conclude that there is no effect of comorbid to the recovery time of residents with covid-19. Covid-19 are known to be dangerous when it infected the elderly or those with comorbid.

The comorbid can be dangerous and belong to those who are at high risk of infected with covid-19. Some of them are obesity, cardiovascular disease, hypertension, pulmonal disease, renal disease and the disease affecting the liver. Majority the death of covid 19 are realated to the patient who has history of comorbid (Armani, 2021).

The study conducted by Hikmawati and Setiyabudi found that the highest percentage of comorbid is hypertension. People with hypertension tend to has lower lymphocyte and it can make the prognosis became worst. Second highest comorbid is diabetes mellitus because the higher rate of blood glucose will affect on the increase of virus virulence, increase the riks of inflammation and people's immunity (Hikmawati & Setiyabudi, 2020). The manifestation for covid-19 are vary and so does the comorbid.

When entering the hospital, the patients are reported to have one of hypertension, diabetes mellitus and another cardiovascular disease. One of those comorbid can increase the risk by 3.4 times for developing Acute Respiratory Distress Syndrome (ARDS) (Karyono & Wicaksana, 2020).

In this study, comorbidity was not related to the length of healing for residents affected by Covid-19, this may be influenced by several factors, depend on person's condition and the psychological condition of each person brings different impacts and changes to the disease response. This is as described in the results of research conducted by Atkins et al where comorbidity is thought to be a factor that effects the level of morbidity and mortality of patients with Covid-19 but not with the length of recovery (Atkins et al., 2020).

This is contrast to results of study from Khedret al that patients with comorbidities experienced significantly more severe symptoms, a tendency to have significantly worse laboratory parameters, a higher percentage of ICU admissions, a higher need for invasive mechanical ventilation than patients without comorbidities and a lower recovery frequency and overall mortality rate significantly higher in cases with comorbidities (Khedr et al., 2020). The main key in patients infected with the Covid -19 virus is the immunity.

Basically the comorbid has no effect on the recovering of confirmed patients, but rather these comorbidities are at risk to become easily infected with the SARS- Covid-19 virus because people who are sick will have a decreased antibody formation and cytokine, and lowering the function of phagocytosis so that the body will susceptible to the infection due to low resistance to invading disease. This happens because people with comorbid diseases have a weaker immune system than people without comorbid diseases. In addition, patients with comorbid diseases may also have experienced complications or organ damage due to the disease they have suffered so far, so they will find it more difficult to fight corona virus infection.

Based on statistical analysis it was found that there was almost no significant difference between sufficient and good knowledge and the recovery time of patient with Covid 19, both with recovery times of more than 14 days or less than 14 days. On sufficient and good knowledge with healing time for more than 14 days each obtained 5,6% while with recovery time less than 14 days it was obtained as many as 28.4% in those with good and sufficient knowledge. The gap only appear at the category of poor knowledge, which are 1,9% for long recovery and 30, 1% for shorter healing. The p value is 0,310 is greater than α 0,05. It can be concluded that there is no effect between knowledge and the recovery time of residents affected by covid 19.

Based on the Indra results study, it was found that a significant relationship between positive knowledge about Covid-19 had a good correlation in an effort to prevent viral transmission because it was able to trigger self awareness to carry out health protocols properly (Indra et al., 2020). However no similar research has been found regarding the relationship between knowledge and recovery time for patients diagnosed as positive for Covid-19.

The knowledge about the Covid-19 prevention in the community is essential during this time and it should include about the Covid-19 transmission, the virus characteristic, sign and symptoms as well as necessary checks to be carried out as well as the test needed to be carried out, the virus transmission process and the prevention as well. Good knowledge can be supported by acceptance of information circulating in the

community about the Covid-19 virus (Suprayitno et al., 2020). It is hoped that the information obtained will be able to increase the patient's motivation to recover.

The recovery process for Covid-19 patients is not only influenced by basic knowledge about the disease, because sometimes knowing many things about the disease will actually have an impact on the individual's psychological state as anxiety and fear. The negative information related to Covid-19 can also has an impact on negative thoughts which will reduce the body immunity and have an impact on the recovery process of the disease. Therefore the people need to be smart to sort out correct and appropriate information and not be provoked by irresponsible news.

Statistical analysis test show the results of 54,1% patient received moderate support with a recovery time of less than 14 days and 30,1 % with high support. For low support, both were found to be 2,7% for each category of recovery of less and more than 14 days. The obtained p value is 0,0017 smaller than $\alpha = 0,05$. It can be conclude that there is a relationship between family support and the healing time of residents affected by Covid 19. Appropriate family support will greatly help patients to meet their needs when experiencing conditions that are felt to be down.

The support provided will help the patient feel valued and give them confidence by removing the negative stigma, and it will speed up the recovery process. Support from closest one, both morally and materially, will help the Covid-19 survivors to stay strong and enthusiastic in living their days to get well soon (Rahmatina et al., 2021), family has a strong relationship with the health status of its members where the role and support of the family is very important for every aspect of health care members starting from strategies to the rehabilitation phase (Husni, Romadoni, & Rukiyati, 2012).

People who are sick are really need support from their families. Because the family are able to motivate and provide the encouragement for the sick to always thinks positively about the prognosis of his illness and always obey the recommended treatment. Support is one of the factors that can strengthen a person to perform a good health behavior and prevent health threats (Soesanto, 2021). Family is the closest environment for the patients and therefore a strong relationship will be established among the members. It will affecting each other both physically or psychologically. Family has a big role and responsibility for the health of themselves and all other family members (Kundari, Hanifah, Azzahra, Islam, & Nisa, 2020).

The presence of the family will providing a sense of security and happiness, motivation and self confidence. This kind of support will triggering the increase of dopamine. Besides, positive family support will providing a save, comfortable and and calming feeling due to the increasing of endorphine. If these happiness hormone are produced properly, it will improve the immunity and speed up the recovery process.

From table 5.9 above it can be stated that respondents with very severe anxiety level were 44 respondents (40,4%); sever anxiety were 45 respondents (41,3%), moderate anxiety for 1 respondents and the rest was no axiety with a long periode of time. For category of recovery time more than a week, the anxiety level was vary range from very severe for 7 respondents (6.4%), severe anxiety for 5 respondents (4,6%) and moderate anxiety and normal both has 1 respondent (0,9%). The obtained p value is 0,401 greater than $\alpha = 0.05$ so it can be stated that there is no relationship between anxiety and recovery time of patients with Covid-19.

Based in the table above it is known that most of the respondents with moderate recovery motivation were 78 respondents (71,6%), high motivation to recover were 17 people (15,6%) with less than two weeks of recovery time. Based on table 5.16 the p

value of 0,85 is greater than 0.05 so a conclusion can be drawn that there is no effect between motivation to recover and the length of time for recovery of residents with Covid 19.

Motivation is an aspect of human behavior or it can be stated that motivation is the behavior that can encourage someone to do something or not do anything. Motivation is the drive that an individual has that can stimulate them to be able to take actions or a basis or reason for a person to behave (Suparno, 2017). Motivation is an inner process or psychological process within the patients which is influenced by several factors, such as education level, past experience, wishes and hopes for the future (recovering). Individual perception of oneself; where a person is motivated or not to do something much depends on the cognitive process in the form of perception. A person's perception of himself will encourage and direct a person to act to speed up recovery time.

Recovery is a state where the individual is healthy or intact physically, mentally, and socially and not just a state that is free of disease, disability and weakness. As a condition of balance between physical, mental, social and spiritual health status that allows the person to live independently and productively which requires treatment and care because both have the same role in revealing the diseases (Hardhiyani, 2013). The level of motivation to recover is related to the three dimensions which are (1) having a positive attitude and behavior that shows a strong and optimistic attitude in dealing with recovery; (2) goal oriented achievement that directs individuals to achieve the desired goals, and (3) forces that encourage individuals are strength that come from within and from outside themselves that can encourage individuals to achieve goals.

The healing of patients affected by Covid-19 is not only influenced by the motivation to recover within by himself but many other factors, such as support from family and closest people, external motivation has more influence on someone with this condition. Good nutrition and positive thoughts are also to be very best source of strength to increase the immunity.

CONCLUSION

Based on the results of the study, it can be concluded that there were several factors that can influence a person's healing process, both internal and external factors. The only significant factor in this study was the influence between family support and the duration of recovery time for residents affected by Covid 19. Meanwhile, the comorbid variables, BMI, knowledge and motivation for healing have no significant effect. Suggestions for future researchers are expected to further develop methods, other variables and other impacts of the disease.

ACKNOWLEDGEMENT

The researcher would like to thank the Rustida Health Academy, Banyuwangi Health Office, Tegalsari Health Center, and the community who have supported and assisted in providing information data for the purpose of this research.

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Original Research

Factors Related Health Status Among Pregnant Women With Confirmed Covid-19 In South Sulawesi, Indonesia

Erfina Erfina^{1*}, Suni Hariati², Kusriani Semarwati Kadar³ Nurmaulid Nurmaulid⁴, Andriani Andriani⁵^{1,2,3,4,5} Faculty of Nursing, Universitas Hasanuddin, Indonesia

ABSTRACT

Background: Pregnant women are a vulnerable population to COVID-19 due to the high pathogenesis of the disease and its effects on pregnancy. Various studies have been conducted regarding pregnant women during the COVID-19 pandemic. However, limited studies regarding health status of pregnant women with confirmed COVID-19. This study was to identify factors related health status among pregnant women with confirmed COVID-19 in South Sulawesi.

Methods: Quantitative study with Cross Sectional design was conducted in this study. The sampling technique was non-probability sampling with a total sample of 37 pregnant women who were confirmed to be COVID-19. Data collection using google forms and data collection entry points from several health centers in Makassar. This variable evaluated with questionnaire by asking what the treatment status when confirmed COVID-19 (hospitalized or quarantine at home). The explanatory variable was maternal age, gestational age at confirmed COVID-19, parity, occupation, family income, frequency of confirmed COVID-19 and those variables were assessed by questionnaire. Bivariate analysis was analyzed using Chi-Square.

Results: There was significant correlation between gravidity with health status among pregnant women with confirmed COVID-19 ($P=0.040$, $OR=4.667$, $95\%CI$). There were no significant correlation between education, employment status, type of employment, and family income with health status among pregnant women with confirmed COVID-19 ($P=0.19$, $P=0.19$, $P=0.793$, $P=0.503$, $95\%CI$).

Conclusion: Identification of factors and descriptions of pregnant women with confirmed COVID-19 is important to provide an overview to nurses and other health workers as early detection and efforts to provide interventions to improve maternal and fetal outcomes.

Cite this as: Erfina, E., Hariati, S., Kadar, K., Nurmaulid, N., & Andriani, A. (2022). Factors Related Health Status Among Pregnant Women With Confirmed Covid-19 In South Sulawesi, Indonesia. (JKG) Jurnal Keperawatan Global, 79-87. <https://doi.org/10.37341/jkg.v0i0.351>

ARTICLE HISTORY

Received : November 9th, 2022Accepted : January 22th, 2022

KEYWORDS

covid-19, health status, pregnant women;

CONTACT

Erfina

erfina@unhas.ac.id

Faculty of Nursing, Universitas Hasanuddin. Jl. Perintis Kemerdekaan Km.10, Makassar, Sulawesi Selatan.

INTRODUCTION

Coronavirus Disease (COVID-19) is a new disease that has shown a rapid increase in terms of cases and deaths since its first identification in December 2019. In February 2020, the World Health Organization (WHO) described the disease as COVID-19, the causative virus as “severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)” and declared it a pandemic (Guan et al., 2020). The incubation period for COVID-19 ranges from 5-6 days or 14 days for the longest incubation period (Kemenkes RI, 2020a).

Coronavirus clinical manifestations include fever, sneeze, and breathlessness, as well as some other symptoms of acute respiratory distress. However, serious symptoms such as pneumonia, respiratory distress syndrome, and renal failure can arise, results in death (Kemenkes RI, 2020b). Currently, the global number of confirmed COVID-19 cases is decreasing, as is the incidence rate in Indonesia. Meanwhile, South Sulawesi Province is in the sixth position with the highest number of cases at 61,215 (3.8%).

It was further explained that Makassar City was the area with the most COVID-19 cases compared to other areas in South Sulawesi (Gugus Tugas Percepatan Penanganan COVID-19, 2021). There is a paucity of information on COVID-19 and adverse pregnancy outcomes (Ramussen & Jamieson, 2020). However, women who are pregnant are a vulnerable group to COVID-19 due to the high pathogenesis of the disease and its effects on pregnancy (Schwartz & Graham, 2020). Since it is emergence in December 2019 until 2021 around 31.016 pregnant women infected COVID-19 (Lassi et al., 2021).

Pregnancy is an important period for a woman in her life but also a life-threatening event because during the pregnancy period, all pregnant women are at risk for complications or complications that require treatment during pregnancy (Mahajan & Sharma, 2014). During a pandemic, pregnant women and fetuses are particularly vulnerable to infectious diseases (Addi et al., 2020). Pregnant women are a high-risk population for contracting COVID-19 and the most commonly reported symptoms were cough, fever, fatigue and anosmia/ageusia (Lassi et al., 2021).

Based on previous study, among pregnant women confirmed COVID-19 about 7% were admitted intensive care unit (ICU), 8% required mechanical ventilation, and 2% of the women died (Lassi et al., 2021). This happens because conditions during pregnancy cause a decrease in partial immunity due to physiological changes so that it causes pregnant women to be more susceptible to virulent infections (Pradana et al., 2020).

COVID-19's effect on the mother and fetal development during pregnancy is unclear (Ramussen & Jamieson, 2020). In China, infection in pregnant women occurs in the third or late second trimester, but whether SARS-CoV-2 infection in the first trimester causes fetal defects or death is unknown. Several incidents of pregnant women with COVID-19 giving birth to preterm or low birth weight babies have been reported, but the link between these effects and COVID-19 has not been clearly explained. (World Health Organization, 2020).

Several other issues that are important to pregnant women are the psychological, physical impact, limited health services and contact with health workers, equipment for health protocols that are not owned by the public and the development of various variations of COVID-19 symptoms that can cause infection and impact on the fetus (Corbett et al., 2020). Various impacts can be experienced by pregnant women as a result of the crisis situation during the COVID-19 pandemic.

Various studies have been conducted regarding pregnant women during the COVID-19 pandemic (Ajayi et al., 2021; Ginting et al., 2013; Mizrak Sahin & Kabakci, 2021; Mortazavi & Ghardashi, 2021). However, more research is in the form of reviews, and limited studies regarding characteristics and health status of women in pregnancy with confirmed COVID-19. One study reported that there were associations between COVID-19 outcomes and socioeconomic status, based on health and behavioral indicators (Mena et al., 2021). Understanding the societal risk factors that make some groups particularly vulnerable is critical for more effective pandemic interventions in this and future pandemics. As a result, it is critical to conduct research on the health status of pregnant women with diagnosed COVID-19 in South Sulawesi.

The health status of pregnant women refers to maternal health and well-being that should be improved with prevent pregnant mother from the most common direct causes of maternal injury and death (World Health Organization, 2022). Hospitalized or self-quarantine is a treatment of COVID-19 that could be prevent pregnant women and their baby's injury. Quarantine and self-isolation can be carried out at home if the patient is positive for COVID with no symptoms or mild symptoms (Kementerian Kesehatan Republik Indonesia, 2021).

This research is very important as initial information to develop strategic nursing interventions related to the promotion, prevention and recovery of the health of pregnant women who have been diagnosed with COVID-19 in a comprehensive care. Thus, this study aims to identify factors related health status among pregnant women with confirmed COVID-19 in South Sulawesi.

MATERIALS AND METHOD

Quantitative study with Cross Sectional design was conducted in this study to identify factors related health status among pregnant women with confirmed COVID-19 in South Sulawesi, Indonesia. South Sulawesi Province is located on the eastern side of Indonesia and is one of the regions with higher number of confirmed COVID-19 cases in Indonesia (Gugus Tugas Percepatan Penanganan COVID-19, 2021). The population in this study were pregnant women in South Sulawesi. Non-probability sampling was used, with a total sample of 37 pregnant women who were confirmed to have COVID-19.

Data collection using google forms and data collection entry points from several health centers in Makassar. Prior of informed consent, it was explained that this questionnaire took 5-10 to answer the questions. Participant who agreed to participate in this study received inform consent via google form by responding with tick "I consent" Pregnant women in this study were given token of appreciation for their participation. Ethical approval for this study was obtained from the Ethics Commission of Health Research and Development Sint Carolus School of Health Sciences.

The outcome variable was health status of pregnant women with confirmed COVID-19. Health status of pregnant women with confirmed COVID-19 refer maternal condition during confirmed included hospitalized or self-quarantine at home. This variable evaluated with questionnaire by asking what the treatment status when confirmed COVID-19 (hospitalized or quarantine at home).

The explanatory variable was maternal age, gestational age at confirmed COVID-19, parity, occupation, family income, frequency of confirmed COVID-19 and those variables were assessed by questionnaire. Data analysis using univariate data analysis with frequency distribution and bivariate analysis using chi-square.

RESULTS

Characteristics of pregnant women with confirmed COVID-19

A total of 37 pregnant women with confirmed COVID-19 participated in this study. Table 1 shows characteristics data of pregnant women with confirmed COVID-19. The mean of maternal age of participants were 30.97 ± 4.573 (20-40) and gestational age when confirmed COVID-19 were 5.32 ± 2.334 (1-9).

The mean of gravida when confirmed COVID-19 of participants were 2.16 ± 1.537 with 17 (45.9%) was primigravida and 20 (54.1%) was multigravida. The majority of participants with higher education (n=29, 78.4%) and low education (n=8, 21.6%). Most participants were housewife (n=25, 67.6) and employed (n=12, 32.4). Regarding the employment status, 21 (56.8%) participants were non health care staff and 16 (43.2%) working as health care staff.

For the family income, majority of the participants (n=27, 73%) who reported being more than minimum regional wage. The majority of participants frequency of confirmed COVID-19 were one time (35 (94.6%) and twice (2, 5.4%). Twenty-four participants (64.9%) were hospitalized when confirmed COVID-19 and 13 (35.1%) were self-quarantine at their home.

Table 1. Characteristics of Pregnant Women Confirmed COVID-19

Variabel	f (%)	Mean±SD	Min -Max
Maternal age		30.97 ± 4.573	20 – 40
Gestational age		5.32 ± 2.334	1 – 9
Gestational trimester			
Trimester 1	11 (29.7)		
Trimester 2	13 (35.1)		
Trimester 3	13 (35.1)		
Gravidity		2.16 ± 1.537	1 – 9
Primigravida	17 (45.9)		
Multigravida/Grande	20 (54.1)		
Education			
Low education	8 (21.6)		
Higher education	29 (78.4)		
Employment status			
Employed	12 (32.4)		
Housewife	25 (67.6)		
Type of employment			
Health care staff	16 (43.2)		
Non health care staff	21 (56.8)		
Family income			
Under minimum regional wage	10 (27.0)		
Upper minimum regional wage	27 (73.0)		
Frequency of confirmed COVID-19			
Once	35 (94.6)		
Twice	2 (5.4)		
Health status			
Hospitalized	24 (64.9)		
Self-quarantine at home	13 (35.1)		

Factors related health status among pregnant women with confirmed COVID-19

Factors related health status among pregnant women with confirmed COVID-19 is shown in Table 2. Based on data analysis, there are five independent variables (education, employment status, type of employment, family income and parity). There was significant correlation between gravidity with health status among pregnant women with confirmed COVID-19 ($P=0.040$, $OR=4.667$, 95% CI). There were no significant correlation between education, employment status, type of employment, and family income with health status among pregnant women with confirmed COVID-19 ($P=0.19$, $P=0.19$, $P=0.793$, $P=0.503$, 95% CI).

Table 2. Factors related health status among women pregnancy with confirmed COVID-19

Variables	Health status		P value	OR
	Hospitalized (f,%)	Self-quarantine (f,%)		
Education				
Low education	8 (33.3)	0 (0.0)	0.19	1.813
Higher education	16 (66.7)	13 (100.0)		
Employment status				
Employed	11 (45.8)	1 (7.7)	0.19	10.154
Housewife	13 (54.2)	12 (92.3)		
Type of employment				
Health care staff	10 (41.7)	6 (46.2)	0.793	0.833
Non health care staff	14 (58.3)	7 (53.8)		
Family income				
Under min regional wage	7 (29.2)	3 (23.1)	0.503	1.373
Upper min regional wage	17 (70.8)	10 (76.9)		
Gravidity				
Primigravida	14 (58.3)	3 (23.1)	0.040	4.667
Multigravida/Grande	10 (41.7)	10 (76.9)		

DISCUSSION

The results of this study provide an overview of factors related health status among women pregnancy with confirmed COVID-19. Pregnant women and their fetuses are a cluster that is susceptible to infectious diseases. During a pandemic, pregnant women and fetuses are particularly vulnerable to infectious diseases (Addi et al., 2020). Pregnancy-related physiological and psychological changes will increase risk for infection, particularly when infection affects the cardiovascular and respiratory system. This may increase the risk of respiratory failure during pregnancy (Addi et al., 2020; Culp, 2020).

The results reported that the mean age of pregnant women with confirmed COVID-19 was in the normal reproductive age range, meaning they were not at risk. Maternal age is one of the important factors for pregnant women in relation to the condition of the mother and baby. Age 35 years is the age at risk. Women with Delayed childbearing carries a higher risk of maternal and obstetric complications (Londero et al., 2019). Pregnant women who were ≥ 35 years old had greater odds for preterm delivery, hypertension, superimposed preeclampsia, severe preeclampsia, and decreased risk for chorioamnionitis (Cavazos-Rehg et al., 2015).

The transmission of SARS-CoV-2 from mother to fetus in utero is still being questioned. Several studies have found viral separates in blinding fluid, umbilical cord blood, and newborns throat swabs from some patients. Another study also found newborns infected with COVID-19 (Chen et al., 2020; Dashraath et al., 2020). This infection disease causes progressive respiratory system disorders in the mother and stillbirth (2%), intrauterine growth retardation disorders (IUGR: 10%) and preterm birth in the fetus (Dashraath et al., 2020).

In our study, the confirmed COVID-19 pregnant women with higher education. Previous study has also shown the confirmed mother had higher education and more likely employed (Yang. et al., 2020). This result also reported that pregnant women who hospitalized had housewife and non-health care staff compared with pregnant women who working as health care staff. Healthcare workers with Covid-19 were more likely to have an identified COVID exposure, present less severely ill, and less likely to be admitted to the hospital (Zhao & Qiao, 2020). This result assumed that pregnant women who working as health care staff have more knowledge related treatment of COVID-19.

This study reported that there was correlation between gravidity and health status among pregnant women confirmed COVID-19. This result shown more primigravida mothers are hospitalized due to the condition of pregnant women with moderate and severe symptoms who require hospitalization. In line one study about characteristic clinical of pregnant women with COVID-19 in Wuhan, China reported that majority pregnant women was nulliparous (Zhao & Qiao, 2020). COVID-19 infection in pregnancy has a clinical manifestation and severity that is probably similar with those of non-pregnant adults. It may not be certainly correlated with poor maternal or perinatal outcomes (Elshafeey et al., 2020).

The limitations of this study were small samples of pregnant women who were diagnosed COVID-19 and psychological variables were not explored. Thus, further research is recommended to use a large number of samples and include psychological variables to assess the health status of pregnant women confirmed COVID-19.

CONCLUSION

This study identity factors related health status among pregnant women who were confirmed COVID-19 in South Sulawesi, and highlighting gravidity was significant correlation with health status of pregnant women with confirmed COVID-19. Our result show that the majority of pregnant women who confirmed COVID-19 had high education, housewife and once diagnosed with COVID-19. Identification of factors related health status of pregnant women with confirmed COVID-19 is important to provide an overview to nurses and other health workers as early detection and efforts to provide interventions to improve maternal and fetal outcomes.

ACKNOWLEDGEMENT

We would like to thankful to all the pregnant women who participated in this study and the enumerators of this study.

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Original Research

Psychological Resilience Skills Training To Improve Psychological Resilience, Self Esteem, And Quality Of Life

Rita Benya Adriani^{1*}, Jenita Doli TineT Donsu², Dwi Sulistyowati³

^{1,3} Department of Nursing, Poltekkes Kemenkes Surakarta, Indonesia

² Department of Nursing, PoltekkesKemenkes Yoguakarta, Indonesia

ABSTRACT

Background: It is expected that the quality of life of TB patients will improve after treatment, but research shows indications of emotional stress in TB patients at the end of treatment, clinical, social consequences, drug resistance, and decreased quality of life, especially psychological and social aspects. Research purpose knowing how the effect of psychological resilience, self esteem, quality of life of TB survivors.

Methods: A total of 61 TB survivors were taken by total sampling technique. 30 respondents in the experimental group were given psychological resilience skills training. Data was collected using the CD-RISC instrument for psychological resilience, Rosenberg self-esteem scale for self esteem, and WHOQOL-bref for quality of life. Pre test is taken before training. The post test was carried out 2 weeks after training. Data analysis used regression test with SPSS 19 software.

Results: Based on the SPSS analysis, it is known that no significant effect of psychological resilience on self esteem with *p* value of 0,33. Psychological resilience has a significant effect on quality of life with *p* value of 0,048. Self esteem has no significant effect on quality of life with *p* value of 0,335. Psychological resilience is more influential on social aspects than psychology on the quality of TB survivors.

Conclusion: Possibly related to the participating in the association of fellow TB survivors. It can also caused by the length of time to recover. Psychological resilience skills can be developed by stakeholders for TB survivors.

ARTICLE HISTORY

Received : January 7th, 2022

Accepted : February 17th, 2022

KEYWORDS

psychological resilience, quality of life, self esteem, TB survivors;

CONTACT

Rita Benya Adriani



benyaadriani@gmail.com

Departement of Nursing, Poltekkes
Kemenkes Surakarta, Jln. Letjen
Sutoyo, Mojosongo, Surakarta,
Indonesia.

Cite this as: Adriani, R., Donsu, J., & Sulistyowati, D. (2022). Psychological Resilience Skills Training To Improve Psychological Resilience, Self Esteem, And Quality Of Life. (*JKG*) *Jurnal Keperawatan Global*, 88-101. <https://doi.org/10.37341/jkg.v0i0.390>

INTRODUCTION

Tuberculosis (TB) is caused by acid fast bacteria (AFB) from the Mycobacterium group that can kill about two million people per year (Farmer & Sundberg, 1986). WHO data show an increase in the incidence of TB at the world level from 8,4 million per year to 10 million in 2005 and a slight decrease to 9,6 million in 2015. The Ministry of Health of The Republic of Indonesia (2013) shows the prevalence of TB in Indonesia is

0,4 %. of the total disease. The incidence of TB in 2017 was 420.994 (Ministry of Health, 2018).

The Directorate General of Disease Prevention and Control the Ministry of Health of The Republic of Indonesia in 2018 found that the province of Central Java was third place after West Java and East Java with the number of TB incidences of 42.272. Most TB patients were in the productive age group, 15 – 55 years. The proportion of TB cases in Surakarta City in 2015 – 2018 ranged from 1755 and gradually decreased to 1178 (Surakarta Health Office, 2018). Mojosongo village had 36 (82%) patients who had treated, 8 patients (18%) had not treated and 44 patients had confirmed drug resistant tuberculosis. Even so, the Surakarta City government still maintains the slogan “*Healthy Solo Without TBC*,” because Surakarta City targets that in 2025 pulmonary TB is eliminated and in 2035 it is free from TB.

Quality of life and health are two interesting things to study because of the subjectivity of individual perceptions in viewing one’s own position in life related to goals, expectations, and living standards which are influenced by local culture and value systems. This view affects physical, psychological health, social relationships, and the level of independence. Quality of life in Asian countries is still rank low, especially in term of physical and psychological (Alfauzan & Lucya, 2021) and social support (Masumoto *et al.*, 2014). Common social stressors are stigma, discrimination, isolation, and lack of social support (Alene *et al.*, 2018).

Aspects of mental disorder that commonly accompany TB patients are depression, anxiety, and psychosis. The percentage of psychosis was greater at the end of treatment (Orovwigho *et al.*, 2016). Concluded from various references obtained that the quality of life of TB patients did improve during therapy, but some patients experienced a decrease in quality of life due to comorbidities and drug resistance (Aggarwal, 2019). Muhammad *et al* (2014) found indications of emotional stress in TB patients at the end of treatment, resulting in not being able to carry out normal daily activities. TB survivors may have respiratory symptoms, abnormal spirometry, acute respiratory events, and symptoms that affect the ability to work (Meghji *et al*, 2020).

Differences in the quality of life of TB patients after treatment according to (Atif *et al*, 2016) are influenced by personal characteristics, cultural differences, and how to collect research data. Quality of life, especially in the mental component related to self esteem (Bartoces *et al*, 2009). Explained that a decrease in the quality of life occurred in TB patients within a period of 2-6 months after the completion of the treatment period (Chung *et al*, 2014). It is suspected that this decrease is related to low self esteem due to the stigma received by TB patients, comorbidities, and psychological disorders. Found that TB patients had lower self esteem compared to fracture patients (Orovwigho *et al*, 2016).

More than half of the participants showed low self esteem. Also found that the self esteem of pulmonary TB patients was lower than the self esteem of extra pulmonary TB patients (Othman *et al.*, 2011). Explains that the self esteem of TB patients is influenced by societal stigma, and psychological resilience (Husnaniyah, 2017) (Yazdi-ravandi, Taslimi, Shams, & Haghparast, 2013). Explain that low self esteem has a risk of decreasing quality of life (Cremers *et al.*, 2015).

Adds that low self esteem triggers individuals to be passive and aggressive (Eayuedwi, 2016). State that self esteem interventions are divided into five categories, namely the provision of social support, family/group counseling, physical fitness, strategies used in certain populations, and cognitive behavioral modification (Damian &

Robins, 2011). Explains that self esteem is a reflection of subjective feelings, strength and energy to act (Lachowicz-Tabaczek & Sniecinska, 2011). Self esteem is influenced by self evaluation of the 4 domains of self image, namely Competence, Morality, Social Acceptance and Energetic Disposition.

The low self esteem of TB patients is at risk of low psychological/mental domains and social relation on the quality of life of TB patients. Self esteem variable is directly proportional to psychological resilience (Pada *et al.*, 2017; Lete *et al.*, 2019). Resilience as a process is the ability of an entity (individual, group, or community) to anticipate, resist, absorb, respond, adapt, and recover from disturbances (Carlson *et al.*, 2012). There is relationship between MDR TB patients and stress resilience during pandemic (Nindrea *et al.*, 2020).

The ability of family to cope with adaptation to the 5 stages of family resilience is one form of family support to help TB patients build psychological resilience (Rachmawati *et al.*, 2019). Provide psychological resilience skills and can increase the self esteem of adolescents with low social status (Aunillah & Adiyanti, 2015). The existence of a relationship between resilience skills and self esteem encourages researchers to provide psychological resilience skills to TB survivors to increase self esteem so that the quality of life also increases. Psychological resilience skills that will be given to TB survivors use a Cognitive Behavior Therapy (CBT) approach to provide cognitive and behavioral changes to TB survivors.

Cognitive Behavior Therapy was developed by Aron Beck in the early 1960s, to modify dysfunctional ways of thinking, believing, and becoming more adaptive (Beck & Dozois, 2011). CBT technique is a technique that guides TB survivors to be able to explore and find the negative mindset from within that causes psychological barriers, so that TB survivors are able to change their behavior internally (Knapp & Beck, 2008). This study aims to determine the description of psychological resilience, self esteem, quality of life of TB survivors who have completed psychological resilience skills.

MATERIALS AND METHOD

This study used a Quasi Experimental Design technique with a Pre Test – Post Test Control Group Design. The study was conducted in Mojosongo Village, Surakarta for nine months from January to October 2021. 61 TB survivors were obtained through total sampling technique. 30 TB survivors in the experimental group and 31 TB survivors in control group.

Data collection is done by self-report method. TB survivors were asked to complete The Connor-Davidson Resilience Scale (CD-RISC) to measure psychological resilience skills, The Rosenberg self-esteem Scale to measure self-esteem, and WHOQol-bref to measure quality of life in four domain (physical, psychological, social, and environmental health). Psychological resilience skills training is given to TB survivors in 2 stage.

First, TB survivors recognizes events that cause positive and negative emotional reaction that trigger behavior. Second stage provides skills to change negative thought into positive ones. Before psychological resilience skills training is given, 1 (one) enumerator who has been given input in accordance with the knowledge of the researcher collect pre test data on Friday, 11 June 2021. Two weeks after given psychological resilience skills training respondents were asked to fill out the scale to measure psychological resilience, self esteem, and quality of life (post test) on June 24, 2021.

Research involving humans as research subjects needs to be accompanied by research ethics to ensure that the benefits obtained from research outweighs the harm caused. The ethical test was carried out on May 25, 2021 from Poltekkes Ministry of Health, Surakarta.

RESULTS

Univariate analysis shows the description of years of recovery, respondent's age, gender, psychological resilience, self esteem, and quality of life per domain. Most respondents had recovered from TB three years ago in the experimental group (66.6%) and one year ago (38.7%) in the control group (table 1).

Table 1. Years of Recovery

Years	Experiment	%	Control	%
2017	1	3.4%	2	6.5%
2018	10	33.3%	9	29%
2019	10	33.3%	8	25.8%
2020	9	30%	12	38.7%

Table 2 shows that most of the respondents were of productive age (15-55) as many as 21 respondents (70%) in the experimental group and 24 respondents in the control group (77.4 %).

Table 2. Respondent's Age

Age	Experiment	%	Control	%
15 – 25	4	13.3%	2	6.5%
26 – 35	8	26.7%	5	16.1%
36 – 45	3	10%	7	22.6%
46 – 55	6	20%	10	32.2%
56 – 65	6	20%	5	16.2%
66 – 75	3	10%	1	3.2%
76 – 85	0		1	3.2%
	30		31	

Table 3 shows that the most gender in the experimental group was male (56.7%) and the control group was female (67,7%).

Table 3. Gender

Gender	Experiment	%	Control	%
Male	17	56.7%	10	32.3%
Female	13	43.3%	21	67.7%

Table 4 shows the psychological resilience of respondents based on CD-RISC total score. The average total score in the experimental group was 35 (medium) with a min value of 27 and max 44 before being given treatment to 56 (moderate) with a min value of 45 and max 63. The increase in score indicates that respondents have been able to recognize their own emotion and thought both positive and negative, then change negative emotions and thought into positive ones, so that behavioral performance becomes positive.

Whereas in the control group there was a decrease in psychological resilience. The average total score was 36 (medium) with a total score of min 28 max 46. After being measured together with the experimental group that had received treatment, there was a decrease in the value of the total score for the average psychological resilience of 25.8 (medium) with a score of min 21, max 34.

Table 4. Psychological Resilience

Group	Pre/Post	Min	Max	Mean	SD	Category
Experiment	Pre	27	44	35	4,4	Middle
	Post	45	63	56	4,5	Middle
Control	Pre	28	46	36	5,1	Middle
	Post	21	34	25,8	3,74	Middle

Table 5 shows self esteem based on The Rosenberg Self-Esteem Scale total score . The average total score in the experimental group was 7.8 (medium) before treatment with a minimum score of 4 and a maximum of 12 to 23 (high) after treatment with a minimum score of 18 and a maximum of 27. In the control group the total score was 9, 74 (medium) before the experimental group received treatment with a value of min 6 and max 12. After the experimental group received treatment, in the control group, the total score was 5.32 (medium) with min 2 and max 9.

Table 5. Self Esteem

Group	Pre/Post	Min	Max	Mean	SD	Kategori
Experiment	Pre	4	12	7,8	2,3	Middle
	Post	18	27	23	2,2	High
Control	Pre	6	12	9,74	1,65	Middle
	Post	2	9	5,32	1,56	Middle

Table 6 shows quality of life based on WHOQol-bref. The average quality of life of TB survivors in the experimental group was 37.3 (moderate) with a min value of 33 and a max of 47 and up to 3.4 after being given treatment there was an increase in the quality of life with an average of 76.5 (high) with a min value of 68 and max 86 and up to 4.5. In the control group the total score was 37.8 (medium) before the experimental group received treatment with a min value of 31 and a max of 44 and up to 3.2. After the experimental group received treatment, in the control group, the total score was 36.3 with a min value of 30 and a max of 42 and up to 3,1.

Table 6. Quality of Life

Group	Pre/Post	Min	Max	Mean	SD	Kategori
Experiment	Pre	33	47	37.3	3.4	Middle
	Post	68	86	76.5	4.5	High
Control	Pre	31	44	37.8	3.2	Middle
	Post	30	42	36.3	3.1	Middle

Table 7 shows the quality of life of respondents in the intervention group, which amounted to 30, there was a significant increase in the total score in the social relations domain (D3). Before being given treatment, the mean of social relations was 9.53 (low) with up to 7.63 to 46.2 (high) with up to 17.2. In the environmental domain (D4), there

was a slight increase even though it was still in one group, from an average of 16.3 (moderate) with up to 5.34 to 37.4 (moderate) with up to 9,1.

There was a slight increase even though it was still in one category in the physical domain (D1). Before being given treatment, the mean value was 34.7 (medium) with up to 3.9. After being given treatment, the average was 49.2 (moderate) with up to 6.7. In the psychology domain (D2) there is no significant increase. Before being given treatment, the mean value was 30 (medium) with up to 7.4. After being given treatment, the average was 30.2 (moderate) with up to 8,9 (table 7).

Table 7. Quality of Life per Domain

Group	Pre/Post	D	Min	Max	Mean	Sd
Experiment	Pre	D1	31	44	34,7	3,9
		D2	19	50	30	7,4
		D3	0	25	9,53	7,63
		D4	6	25	16,3	5,34
	Post	D1	38	63	49,2	6,7
		D2	44	81	30,2	8,9
		D3	0	25	46,2	17,1
		D4	19	56	37,4	9,1
Control	Pre	D1	31	38	34	3,5
		D2	19	44	30	5
		D3	0	25	11	8,5
		D4	0	19	13	5,6
	Post	D1	31	38	32,8	3,11
		D2	19	38	30,6	5,3
		D3	0	25	9,68	8,34
		D4	6	19	6	5,27

Description:

D1 : Physical D3 : Social Relationships
D2 : Psychological D4 : Environmental

Bivariate analysis shows the relationship between variables of psychological resilience skills, self esteem, and quality of life. The normality test was carried out to determine the distribution of variable data before carrying out the correlation test using SPSS 21. The results of the normality test are summarized in table 8.

The normality test of psychological resilience data in the experimental group with Shapiro Wilk are p value pretest $0.500 > 0.05$ and p value posttest $0.445 > 0.05$. Thus, it can be stated that the data are normally distributed. Furthermore, the paired t test parametric statistical test was used to determine whether there was an effect of psychological resilience skills on psychological resilience in the experimental group. The results of the paired sample t-test are p value $0.000 < 0.05$, so there is an effect of psychological resilience skills on the psychological resilience of TB survivors in the experimental group.

The normality test of psychological resilience data in the control group with Shapiro Wilk showed that the pretest psychological resilience p value $(0,205) > 0.05$, then it was declared normal and the posttest p value $(0.007) < 0.05$, the data was declared abnormal. Thus, the analysis of the difference test uses Wilcoxon's non-

parametric statistical test. The result of the Wilcoxon test is p value 0.000 <0.05, so there is an effect of psychological resilience before and after in the control group.

The normality test of the experimental group's self esteem data using Shapiro Wilk were the pretest p value (0.352) > 0.05 and the posttest p value (0.153) so > 0.05 so the data was declared normally distributed. Thus, the paired sample t test parametric statistical test was used. The results of the paired sample t test obtained p value 0.000 <0.05, so there is an effect of self esteem before and after the experiment.

The normality test of quality of life data in the experimental group with Shapiro Wilk obtained that the p value of the quality of life of the pretest experimental group (0.028) < 0.05 then it was declared abnormal and the post-test p value (0.783) > 0.05 so that the data was declared normal, then used Wilcoxon non-parametric statistical test. Wilcoxon test results obtained p value 0.000 <0.05, so there is an effect on the quality of life before and after in the experimental group.

The normality test of the quality of life data in the control group with Shapiro Wilk obtained that the p value of the quality of life of the pretest control group (0.393) > 0.05 then it was declared normal and the posttest p value (0.247) so > 0.05 so that the data was declared normally distributed, then used parametric statistical test paired t test. The results of the paired sample t-test obtained p value 0.001 <0.05, so there is an effect on quality of life before and after treatment in the control group.

Table 8. Saphiro Wilk Normality Test and Difference Test

Group	Variabel	Fase	Statistik	p	Sig
Experiment Group	Resilience	Pre	0.969	0.500	0.000
		Post	0.966	0.445	
	Self Esteem	Pre	0.963	0.362	0.000
		Post	0.948	0.153	
	Quality of Life	Pre	0.921	0.28	0.000
		Post	0.978	0.783	
Control Group	Resilience	Pre	0.954	0.205	0.000
		Post	0.900	0.007	
	Self Esteem	Pre	0.907	0.11	0.000
		Post	0.941	0.89	
	Quality of Life	Pre	0.965	0.393	0.000
		Post	0.957	0.247	

The Relationship of Psychological Resilience to Self Esteem

Regression analysis was carried out by researchers to measure the effect of psychological resilience, self esteem, and quality of life variables. Table 9 shows the results of the regression analysis test obtained p value 0.330 > 0.05 so it is known that psychological resilience has no significant effect on self esteem with a coefficient value of 0.109.

Table 9. The Relationship of Psychological Resilience to Self-Esteem

Model	Unstandardized Coefficient		Standardized Coefficient		Sig
	B	Sd	Beta	t	
(Constant)	17.730	6.107		2.903	.007
Resilience Experiment	.109	.110	.184	.992	.330

Model	Unstandardized Coefficient		Standardized Coefficient		Sig
	B	Sd	Beta	t	
<i>postest</i>					

Relationship of Psychological Resilience to Quality of Life

Table 10 shows the results of the regression analysis test obtained p value 0.048 <0.05 so it is known that psychological resilience has a significant effect on quality of life with a coefficient value of 0.362.

Table 10. Psychological Resilience and Quality of Life

Model	Unstandardized Coefficient		Standardized Coefficient		Sig
	B	Sd	Beta	t	
(Constant)	56.366	9.758		5.777	.000
Resilience Experiment <i>postest</i>	.362	.175	.364	2.067	.048

Relationship of Self Esteem to Quality of Life

The results of the regression analysis test obtained p value 0.335 > 0.05 so that it is known that self esteem has no significant effect on quality of life with a coefficient value of - 0.307 (table 11).

Table 11. Relationship of Self-Esteem to Quality of Life

Model	Unstandardized Coefficient		Standardized Coefficient		Sig
	B	Sd	Beta	t	
(Constant)	83.771	7.491		11.183	.000
Resilience Experiment <i>postest</i>	-.307	.313	-.182	-.981	.335

DISCUSSION

Descriptively it can be explained that the youngest TB survivor (respondent) recovered was one year. The gender of TB survivors who became respondents was balanced between men and women of productive age between 15 to 55 years. This description is in line with data findings by WHO (2018) that the productive age is the age susceptible to TB. TB sufferers are at risk of resistance, death, and decreased work productivity. In the end, these risks will significantly affect the economy. As is the case in Brazil (Martins-Melo *et al.*, 2020) and Africa (Kirigia & Muthuri, 2016).

Found that post-tuberculosis lung damage (Post Tuberculosis Lung Damage) brings its own consequences for TB sufferers even after the treatment period has finished (Meghji *et al.*, 2020). TB survivors are at risk for respiratory symptoms, abnormal spirometry, acute respiratory events, and symptoms that affect the ability to work. The results of this study were not able to show whether there was a decrease in the quality of life of TB survivors because the researchers did not measure the quality of life of TB survivors during and after treatment. Measurement of quality of life was given to TB survivors who had the youngest recovery age one year before and after treatment.

The results showed that psychological resilience was positively related to quality of life with p value $0.048 < 0.05$ and coefficient value 0.362. This means that the higher the psychological resilience, the higher the quality of life. There is significant relationships between psychological resilience and quality of life (Bastaminia et al., 2016; Karimirad et al., 2018). Psychological resilience is a mediator variable for distress and Quality of Life (Wu et al., 2015). Descriptively it was revealed that the average quality of life of TB survivors was in the moderate category before being given treatment and became high after being given treatment (table 4.6).

The biggest contributor to the improvement in the quality of life of TB survivors is the domain of social relations (D3). Family support mediates psychological resilience and quality of life (Zhang, Zhao, Cao, & Ren, 2017). There was a significant increase of 36.67 points from the low to high category (table 4.7). This means that before being given treatment, TB survivors experience obstacles in terms of social relations, such as obtaining social support or relating to sexual activity. Awakening from a sense of adversity that is packaged in psychological resilience skills helps TB survivors to overcome problems in social relationships. The results showed p value $0.000 < 0.05$, so there was an effect on the quality of life before and after in the experimental group.

Meanwhile, in the environmental domain (D4), there was an increase in points with a range of 21.1 points, but it was still in the moderate category. This shows that although initially TB survivors experienced obstacles in matters related to the environment such as financial resources, access to social convenience and obtaining information sources and demonstrating their skills in the environment, there was an increase even though it was still in one moderate category. In the physical health domain (D1) there is a range of 14.5 points. The average before is 34.7 (moderate) to 49.2 (moderate). This shows that TB survivors are relatively unimpeded in their daily activities.

The uniqueness occurred in the psychological domain (D2) which did not change with a mean of 30 to 30.2. The results of this study are different from (Yazdi-Ravandi *et al.*, 2013) who found that psychological resilience affects the psychological domain on the patient's quality of life. This may be related to the completion of the treatment period. According to (Chung *et al.*, 2014) a decrease in the quality of life occurs in TB patients within a period of 2-6 months after the completion of the treatment period. Meanwhile, the youngest respondent's recovery age in this study was one year after the treatment period was over. It is suspected that the TB survivor was able to adjust to his health condition so that he did not experience a significant downturn, and needed help to get out of the slump due to the TB disease he had suffered.

Explained that there was a relationship between psychological resilience and self esteem, but the results showed that psychological resilience was not related to self esteem with a p value of $0.330 > 0.05$ (Karatas & Cakar, 2011). Explains that self esteem is a predictor of psychological resilience because emotional balance and self-confidence are very important for TB survivors to deal with stress (Balgiu, 2017). Based on the findings of (Belgiu, 2017), it can be explained that TB survivors do not experience emotional balance disorders even though they experience problems in social relationships.

The results also showed that self esteem was not significantly related to quality of life with p value $0.335 > 0.05$. In this study, the increase in the quality of life of TB survivors was caused by increased social relationships. Not related to the mental component as the results of research by Bartoces, et al (2009). This can happen because

TB survivors are able to adapt to the risk of TB disease. This adaptability may be related to TB survivors' diligent participation in or being active in associations with fellow TB survivors. It can also be caused by the length of time recovering from tuberculosis.

CONCLUSIONS

Based on the description above, it can be concluded that there is no relationship between psychological resilience and self esteem of TB survivors after acquiring psychological resilience skills with p value $0.330 > 0.05$. There is a relationship between psychological resilience and quality of life for TB survivors after acquiring psychological resilience skills with p value $0.048 < 0.05$. There is no effect of self esteem on the quality of life of TB survivors after acquiring psychological resilience skills with p value $0.335 > 0.05$.

Psychological resilience skills can be used and utilized to develop nursing knowledge in dealing with psychological resilience, self esteem, and quality of life of TB survivors. Nurses are expected to improve services in managing TB survivors by providing psychological resilience skills. Survivors' families should provide support to TB survivors in dealing with post-treatment problems. Psychological resilience skills can be used by the Community Health Center in helping to solve the problems of TB survivors after treatment.

ACKNOWLEDGMENT

We would like to the Health Polytechnic of the Surakarta Ministry of Health and Prof. Dr. Bhisma Murti, MPH., MSc., Ph.D for their support. Many thanks to the participants who were involved in this research.

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Original Research

Effect Of Web-Based Learning To Increase Knowledge Of Basic Life Support For Nursing Students During The COVID-19 Pandemic

Addi Mardi Harnanto¹, Sunarto Sunarto^{2*}

^{1,2} Departement of Nursing, Poltekkes Kemenkes Surakarta, Indonesia

ABSTRACT

Background: COVID-19 does not discriminate based on geography, ethnicity, disability status, age, or gender. COVID-19 can be stopped from entering schools and spreading among infected students and employees, while also limiting disruption and safeguarding students and staff from discrimination. Basic life support is one of the critical skills that have to be mastered via way of means of nursing college students earlier than sporting out clinical placement in hospitals. Due to the constraints of the COVID-19 Pandemic, a web-based learning media was developed to make it easier for students to learn about basic life support from wherever they are.

Methods: This study is a comparative experimental study with a pretest-posttest design with a control group. Purposive sampling was utilized in this study. 76 respondents participated in this study and were divided into two groups using the lottery method. The research instrument is form of questions about basic life support developed by the research team. Respondents were divided into 2 groups, namely the experimental group and the control group. The experimental group was given action in the form of independent learning opportunities that were guided using the website while the control group was given treatment in the form of classical learning. Analysis techniques using t-tests.

Results: There was an increase in scores between the pretest and the posttest in both groups. The value of the experiment group increased more than that of the control group. The treatment group's score increased by 3.5 points, while the control group's score increased by 1.9 points. The Sig result was 0.00 based on the t-test analysis.

Conclusion: Web-Based learning increases nursing students' knowledge of basic life support during the COVID-19 Pandemic.

ARTICLE HISTORY

Received : January 1th, 2022

Accepted : February 22th, 2022

KEYWORDS

basic life support, covid-19 pandemic, knowledge, web-based learning;

CONTACT

Sunarto



sunarto_sst@yahoo.com

Departement of Nursing, Poltekkes
Kemenkes Surakarta. Jl. Letjend
Sutoyo, Mojosongo, Jebres,
Surakarta 57127.

Cite this as: Harnanto, A., & Sunarto, S. (2022). Effect Of Web-Based Learning To Increase Knowledge Of Basic Life Support For Nursing Students During The COVID-19 Pandemic. (*JKG*) *Jurnal Keperawatan Global*, 102-108. <https://doi.org/10.37341/jkg.v0i0.386>

INTRODUCTION

The worldwide economy, people's livelihoods, and health have all been severely damaged by the COVID-19 pandemic. Despite the fact that COVID-19, it has primarily

impacted the health of the elderly. has also disproportionately harmed young people (those under the age of 30 and below), as well as their educational and employment opportunities (Rogobete, 2020). The COVID-19 pandemic has had an impact on every industry, including nursing education. As the crisis worsened, many governments shut down schools, colleges, and institutions to protect students, teachers, and their countries (Agu et al., 2021).

COVID-19 must be prevented from spreading in schools, but caution must be exercised to avoid stigmatizing children and employees who have been exposed to the virus. Remember that COVID-19 does not discriminate based on geography, ethnicity, disability status, age, or gender. All students should be welcomed, appreciated, included, and supported in educational settings. COVID-19 can be stopped from entering schools and spreading among infected students and employees, while also limiting disruption and safeguarding students and staff from discrimination (United Nations Children's Fund (UNICEF), 2020).

Universities for producing future scholars are required to be creative and innovative in line with increasingly advanced technological developments, including advances in information technology. The teaching and learning process service no longer relies on a monotonous model in the classroom but also a device that can facilitate interaction between students and lecturers through online vehicles. Based on the instructions from the Directorate General of Higher Education, the Ministry of Education and Culture of the Republic of Indonesia, it was conveyed that learning in higher education in the even semester of the 2020/2021 academic year starting in January 2021 can be held in hybrid learning. Nevertheless, universities must continue to prioritize the health and safety of campus residents (students, lecturers, staff) and the surrounding community (Directorate General of Higher Education, 2021).

Basic life support is one of the important competencies that must be mastered by nursing students before carrying out clinical practice in hospitals. Basic life support is a competency that must be mastered and is a requirement that must be met before students carry out clinical placement. The majority of previous studies on the effectiveness of web media in improving student competence were carried out in developed countries. Before the pandemic, basic life support learning was carried out with the face-to-face method in class followed by practice in the laboratory.

Due to the constraints of the COVID-19 Pandemic, a web-based learning media was developed to make it easier for students to learn about basic life support from wherever they are. The developed web contains a learning prologue, material packaged in modules, video explanations from lecturers and videos about demonstrations of the implementation of basic life support packaged in a role play. The web is also equipped with an evaluation model in the form of pre and post tests to measure the ability of students to carry out independent learning. This study aims to analyze the effectiveness of web-based basic life support learning to increase nursing student knowledge during the COVID-19 Pandemic.

MATERIALS AND METHOD

This study utilizes a comparative experimental study method with a pretest-post test design with a control group, namely with real treatment of respondents who get action in the form of web-based learning. The approach of this study was cross sectional, namely data collection was only carried out at one time without any follow-up.

This research was conducted from May to September 2021 in Surakarta City, Central Java Province. The research population is a professional program student at a public nursing college in Surakarta City who will carry out clinical practice in a hospital with a total of 80 people. Purposive sampling was chosen for the determination of subjects in this study. From a total of 80 people, 76 people were willing to take part in this study. Inclusion and exclusion criteria were set in this study. Inclusion criteria include students who will carry out clinical nursing practice and are willing to attend this research invitation.

While the exclusion criteria set were students who were not willing to attend to fulfill the invitation to this research. Research respondents were divided into two groups with each group consisting of 38 respondents. The way to divide the respondents is by the lottery mechanism. The experimental group was given the opportunity to learn independently using a web guide while the control group was given the opportunity to learn face to face in class.

Knowledge of basic life support in both groups was measured using the pretest and posttest methods. The research instrument is a question of basic life support knowledge packaged in a learning web developed by lecturers at the Department of Emergency and Disaster Preparedness. Before being used in the study, the research instrument was consulted with 3 experts in the field of emergency nursing to determine its validity and reliability.

In the experimental group, independent learning was applied, guided by the website developed by the researcher. The developed web contains a learning prologue, material packaged in modules, video explanations from lecturers and videos about demonstrations of the implementation of basic life support packaged in a role play. While in the control group, respondents were given a classical teaching method guided by a lecturer teaching in front of the class using power point media equipped with videos. Furthermore, the research data were analyzed using t-test.

Research permits were obtained from the local government and university leaders and have received an ethical clearance certificate from the Health Research Ethics Committee of the Regional General Hospital, Dr. Moewardi with the number 582/V/HREC/2021 dated 7th May 2021.

RESULTS

76 respondents signed the research agreement and were further divided into 2 groups, namely the experiment group and the control group. Demographic data are shown in tables 1 below.

Table 1. Distribution of respondent's demographic

	Characteristics	Frequency	Percentage (%)
Gender	Male	10	13.2
	Female	66	86.8
Total		76	100.0
Age	17-20 years	20	26.3
	>20 years	56	73.7
Total		76	100.00

It can be seen in table 1 that women dominate as respondents in this study (86.8%). Moreover, the majority of respondents are more than 20 years old (73.3%). Table 2 shows the level of knowledge in the two groups of respondents.

Table 2. Level of knowledge of respondents

Var	Pretest			Posttest	
	Level	Frequency	Percentage (%)	Frequency	Percentage (%)
Experiment group	High	4	10.5	8	21.1
	Medium	26	68.4	28	73.6
	Low	8	21.1	2	5.3
Total		38	100	38	100
Control group	High	4	10.6	6	15.8
	Medium	28	73.7	29	76.3
	Low	6	15.7	3	7.9
Total		38	100	38	100

Table 2 shows that the majority of respondents in both groups, both at the time of pretest and posttest, were at a moderate level. There was an increase in the level of the posttest in all groups of respondents. The results of the pretest and posttest in the two research groups as well as the results of the analysis of the different tests can be seen in Table 3 below.

Table 3. Result of pretest and posttest-data analysis

Experimental Group					Control Group					t-test
		Average			Average					
Pre-test	Post-test	increase value	Min	Max	Pre-test	Post-test	Min	Max	increase value	Sig
6	9.5	3.5	40	81	6.3	8.1	42	80	1.9	0.0

Table 3 shows that there was an increase in scores between pretest and posttest in both groups. The treatment group had a higher increase in value than the control group. The increase in the score in the treatment group was 3.5 while the increase in the score in the control group was 1.9. Based on the t-test analysis, the Sig result was 0.00. Hence, there is a significant difference between the increase in the score in the treatment group and the increase in the score in the control group.

DISCUSSION

This study shows in the pretest test that the majority of respondents in both the experimental group and the control group are at a moderate level of knowledge about basic life support. Only 4 people in both groups had a high level of knowledge. In the experimental group there were 8 respondents and in the control group there were 6 respondents who were at a low level of knowledge.

After each group received treatment, there was an increase in the level of knowledge. There was an increase in knowledge in both groups of respondents. The

increase in the average score was higher in the experimental group who received the independent learning model with website guidance.

Nursing students who carry out clinical placement in a health care setting will learn to carry out nursing actions under the supervision of a senior nurse as a clinical instructor. Nurses should be able to provide high-quality emergency care. Nurses may face a number of emergency scenarios in the hospital and in the community, such as sudden cardiac arrest. In these cases, nurses must be the first to deliver basic life support.

In acute conditions, nurses who successfully administer first aid and basic life support protocols may have a positive impact on cardiac arrest morbidity and mortality rates. Advanced life support techniques would benefit greatly from nurses with superior knowledge and skills in basic life support operations (Kose et al., 2019). Before students carry out clinical practice, nursing schools are required to prepare basic life support competencies so that students are confident and able to take action if one day they find a patient's condition that requires basic life support action. School of nursing is required to carry out both theoretical and practical learning.

Current information should be updated, technical skills should be consolidated, and appropriate self-esteem related to the application should be formed in accordance with training and manual instructions prepared for the health team in order to successfully administer cardiopulmonary resuscitation (Kose et al., 2019). However, during the current COVID-19 pandemic, direct learning is very difficult to implement because of the risk of spreading viral infections. School of Nursing must develop an effective learning model to help students master a competency.

The inauguration of schools and institutions in the autumn of 2020 will present new problems and hazards for transmission on campuses and in the adjacent neighborhoods. In young adults without underlying medical disorders, the risk of serious health repercussions from COVID-19 infection is modest, instructors, university personnel, and close friends and family members of college students at home and in the community may face a substantially increased risk of serious illness and death if they undergo infected (Walke & Honein, 2020).

Responding to the uncertain conditions of COVID-19, it is necessary to develop an online learning model to help students learn without fear of contracting the COVID-19 virus. Web-based learning as an alternative. The use of Internet technologies for delivering instruction is referred to as web-based learning (WBL). WBL is a new field in the sense that it brings together a number of previously independent domains that underpin educational and technological practice.

While the Internet has many of the same features as past technologies, such as audio, video, and videoconferencing, it also offers new technological possibilities that are expected to change many aspects of education (Aggarwal, 2014). Actually, web-based learning has long been implemented in the nursing areas. Initially web-based learning was used to bridge the need for continuous learning for nurses working in places far from campuses and other reasons. Nurses who have employment and family commitments, work shifts, and may reside a long distance from institutions of higher education face a problem in accessing continuing education Canadian Nursing Association, 1997 cited by (Atack & Rankin, 2002).

The results of this study reveal that both groups' scores improved between the pretest and posttest. There is a significant difference in the increase in the treatment group's score compared to the increase in the control group's score. The previous

systemic review study demonstrates that the effects of e-learning are mostly reported in terms of reactions, knowledge, attitude, self-efficacy, and skills.

In terms of how the learning can be transferred to modify practice and affect patient outcomes, the effectiveness of e-learning interventions employed by nurses in a continuing education environment is uncertain (Rouleau et al., 2019). Web-based education has shown to improve participants' knowledge and skills performance, as well as their self-efficacy in executing nursing skills, with a high percentage of participant satisfaction. Experiments with greater rigor are encouraged (Du et al., 2013).

The results of the previous study shows that web-based interactive learning is far more effective than traditional education in terms of boosting EBP knowledge and skills, as well as confidence in constructing clinical queries. Moreover, this previous study discovered that animations with storylines - which increase students' empathy and immersion in clinical scenarios - are more effective at enhancing students' competence than traditional instruction, which focuses solely on delivering knowledge (Park et al., 2020).

The subjects' ability to access the learning model via the website at any time and from any location contributes to its efficacy. Furthermore, the website was interactive and incorporated learning assistance features such as animations, case studies, and computer modules for the nurses to practice what they had just learned (Sung et al., 2008). However, web-based learning needs to be re-examined in order to acquire psychomotor competence. Results of previous studies.

These findings of previous study imply that combining e-learning and face-to-face education in the classroom to improve drug knowledge is beneficial. An e-learning program can reduce the amount of time and money spent speaking on issues like medication, implying that it could be a valuable addition to nurse education programs (Sung et al., 2008). To reach the psychomotor realm, practice-based learning is needed, such as role play using algorithmic guidance. In a previous study, an algorithm-guided disaster preparedness simulation could improve the competence of community nurses in practicing disaster preparedness (Harnanto & Sunarto, 2019).

CONCLUSIONS

It can be concluded that Web-Based Learning increases nursing students' knowledge of basic life support during the COVID-19 Pandemic. There are many obstacles experienced by students in learning basic life support during the COVID-19 pandemic, hence a learning method and media are needed that are able to ensure student safety and provide complete information and are packaged in an interactive package.

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Original Research

Health Education Using Mobilephone Application To Prevent Breastfeeding Problems

Kiki Rizqi Ependi¹, Mekar Dwi Anggraeni^{2*}, Aprilia Kartikasari³

^{1,2,3} Department of Nursing, Faculty of Health Sciences, Universitas Jenderal Soedirman, Indonesia

ABSTRACT

Background: Low exclusive breastfeeding rate in Indonesia is influenced by several factors. Exclusive breastfeeding rate in Indonesia is 65.16%. Breastfeeding problems affected exclusive breastfeeding duration among Indonesian breastfeeding women. Health education is needed to prevent and manage breastfeeding problems. This study aimed to analyze the effect of providing education using a mobile phone to improve mother's knowledge about breastfeeding problems prevention.

Methods: This study used a true experiment with control group pretest and posttest design. The sampling techniques used in this study was simple random sampling, consisted of 54 respondents which divided into intervention group and control group. This study was conducted in Banyumas District, Central Java province, Indonesia. The population in this study was breastfeeding mothers. The demographic characteristic questionnaire and the Breastfeeding Experience Scale (BES) were used to collect the data. All data were normally distributed and analyzed using paired t-test and independent t-test.

Results: There was a significant difference between pretest and posttest scores in the intervention group ($t=0.03$, $p<0.05$) and no significant difference between in the control group ($t=0.161$, $p>0.05$). Mean of post-test scores in intervention and control group were 28.18 and 30.19, respectively. There was a difference of post-test scores between the intervention and control groups ($t=0.000$, $p<0.05$).

Conclusion: The results of this study revealed that a mobilephone application has been proven effective in reducing the breastfeeding problems. We recommend develop the application to address more complex breastfeeding problems.

ARTICLE HISTORY

Received : January 8th, 2022

Accepted : February 21th, 2022

KEYWORDS:

breastfeeding problems, mobile phone application, postpartum;

CONTACT

Mekar Dwi Anggraeni



mekar.anggraeni@unsoed.ac.id

Department Nursing, Faculty of Health Sciences, Jenderal Soedirman University. Jl. Profesor DR. HR Boenyamin No.708, Dukuhandong, Grendeng, Kec. Purwokerto Utara, Kabupaten Banyumas, Jawa Tengah 53122.

Cite this as: Ependi, K., Anggraeni, M., & Kartikasari, A. (2022). Health Education Using Mobilephone Application To Prevent Breastfeeding Problems. (*JKG*) *Jurnal Keperawatan Global*, 109-117. <https://doi.org/10.37341/jkg.v0i0.389>

INTRODUCTION

Breastmilk is the most effective and safe nutrition for infant. World Health Organization (WHO) recommends every mothers to provide only breastmilk to their infants, since birth until six months of infant's age and continue breastfeeding until the age of two years with supplemental food (WHO, 2015). The exclusive breastfeeding

rate in the world was 38% (WHO, 2017). While in Indonesia, the exclusive breastfeeding rate was 65.16% and it is below the Indonesia Ministry of Health's target which counted at least 80% of infants should exclusively breastfeed (Indonesia Ministry of Health, 2018).

The low exclusive breastfeeding rate in Indonesia was caused by several factors such as lack of knowledge of breastfeeding mothers, perceptions of low breastmilk production, physical problems, lack of family support (Kartikasari, Anggraeni, Latifah, & Setiawati, 2019), lack of workplace support, negative attitude towards exclusive breastfeeding, and breastfeeding problems (Anggraeni, Punthmatharith, & Petpichetchian, 2020).

The impact of non exclusive breastfeeding to infants are increase risk of death from diarrhea, colic, food allergies, asthma, diabetes, and chronic digestive tract diseases (Adiningrum, 2014). The under-five mortality rate due to diarrhea in 2018 reached 12.3%, a little decrease compared to the previous year, which was 18.5% (Indonesia Ministry of Health, 2018). The non-exclusive breastfeeding practice is influenced by several factors.

One of the significant contributed factor is breastfeeding problems such as sore nipples, inappropriate breastfeeding technique, problems with the nipples, breast problems such as swelling, blocked ducts, mastitis, and breast abscesses (Zangmo, Wangmo, Tobgay, & Gurung, 2018). These breastfeeding problems can be prevented by increasing mother's knowledge about breastfeeding problems' prevention and management.

Health education may be used to increase mother's knowledge related to breastfeeding problems prevention. Previous studies using several health education method to manage breastfeeding problems, such as prenatal counseling (Shafaei, Mirghafourvand, & Havizari, 2020), post-natal counseling (de Oliveira, Giugliani, & Santo, 2006), proactive lactation management and social support, prenatal education/counseling/ motivation/follow-up, high motivation, using of breast milk, olive oil, breast shield, feeding with container and pacifier, moist warm application (Karacham & Saglik, 2018).

Nowadays, mobile application has been used to deliver health education effectively (Fitriani, 2011). The use of electronic media in Indonesia reached 171.17 million (64.8%), almost half (49.52%) of Indonesian women in productive age (19-34 years) used internet (APJII, 2018). The use of mobile phone has been proven as a health promotion media, *Ayah ASI*-a mobile phone application was effective to increase husband's exclusive breastfeeding knowledge and support in intervention group. The mean of breastfeeding knowledge pretest and post-test scores were 6.5 and 8.1, respectively.

The t-test result showed that there were a significant differences between breastfeeding knowledge pre and post test scores among intervention group ($p < 0.05$) (Budianto & Handayani, 2017). Another study found that the use of *Gadget Pintar* (Gapin) mobile application was effective to increase adolescent's knowledge and attitude about premarital sex (Turah, 2018). However, there is no previous study developing a mobile phone application to increase mother's knowledge about breastfeeding problems prevention.

This study aimed to analyze the effect of providing education using a mobile phone to improve mother's knowledge about breastfeeding problems prevention.

MATERIALS AND METHOD

The research design of this study was a *True Experiment with Control Group Pretest and Posttest Design*. The study was conducted June-August 2019 in the Primary Health Center Purwokerto Utara 1, Banyumas District, Central Java Province. The population in this study were breastfeeding mothers with babies 0-4 months seen from the time the mother combined work and breastfeeding. The population in this study was 181 breastfeeding mothers. The sample size was calculated using unpaired numerical analytic formula $n_1 = n_2 = 2 \frac{(Z\alpha + Z\beta)^2 S}{(X_1 - X_2)^2}$ and previous study's proportion and standard deviation (Susanto, Anggraeni, & Susmarini, 2017).

Based on the the calculation, this study need 24 respondents in each group and the researches added 10% more if there were respondents withdrew from this study. So, there were 27 respondents in each group. This study used a simple random sampling, which selected respondents randomly using a shuffling method and respondents were included in the intervention or control group according to the paper that came out of the shuffling.

There were 54 respondents in this study which divided into 27 respondents in the intervention group and 27 respondents in the control group. The inclusion criteria of respondents in this study were breastfeeding mothers, had infants aged 0-4 months, had single infant, had full-term infant, had android-based *smartphones*, and willingness to participate in this study. While the exclusion criteria in this study were mothers who had a history of breast surgery, history of taking cancer drugs, HIV/AIDS, herpes, Tuberculosis, syphilis, or cancer, mother who had infants who been treated in the Neonatal Intensive Care Unit, infant who had indications of formula milk feeding, infants who had diseases or anomalies such as cleft lip, esophageal atresia, and mothers who withdrew from the study.

The sample in this study were recruited using a probability sampling method with simple random sampling technique. The number of sample in each group was 27 respondents. The instruments used in this study were the demographic data questionnaire and the Breastfeeding Experience Scale (BES) questionnaire, which was developed by Wambach in 1997 (Wambach, 1997) and has been translated into Indonesian and tested validity and reliability (Anggraeni, Punthmatharith, & Petpichetchian, 2020). The results of BES questionnaire validity and reliability test were 0.8 and 0.89, respectively.

The data were collected from December 2019 to January 2020. Data were collected door to door by researcher accompanied by a health care volunteer. Each eligible mother was approached, explained the study purpose, procedure, and risk, prospective mothers who interest to participate in this study were asked to fill informed consent and signed to show their willingness to participate in this study. Respondents both in the intervention and control group performed pretest. After that, respondents in intervention group were requested to install the-*MAPSI* and posttest was carried out 7 days later.

During this seven days, the researchers monitored respondents 2 times, in the 3rd and 6th days, used a social media (WhatsApp) in order to remind respondents to read the application and ask the respondent to let the researchers know when they already read the application. While, respondents in the control group performed posttest in the same day with respondent in the intervention group however, the researcher let them

know about the *MAPSI* after performed posttest. This study used univariate data analysis to report the respondents' demographic characteristics.

The breastfeeding problems data normality was examined using a Saphiro-Wilk test. Since all the data normally distributed, the differences of pre and posttest scores in intervention and control group were examined using a pair t-test, while the differences between post-test scores of intervention and control group were examined using independent t test. This study had ethical approval from Institutional Review Board Faculty of Medicine, Universitas Jenderal Soedirman No. 020/EC/KEPK/XI/2019.

RESULTS

Table 1 showed that the mean of respondents' age in intervention group and control group were 29.67 years old and 31.67 years old, respectively. The majority of respondents' graduated Junior High School (35.2%). Most of respondents in this study were housewives (53.7%). The majority of respondents had income more than regional minimum standard (61.1%). Three-quarter of respondents' delivered vaginally (77.7%).

Table 1. Characteristics of Respondents Based on age, last education, occupation, income level, and type of delivery in the intervention group and control group

Variable	Intervention Group		Control Group		Total		p
	f	%	f	%	%		
Age (Mean, SD)	29.67	(4,899)	31.63	(4,978)			0.941
Level of education							
Elementary School	6	11.1	4	7.4	10	18.5	0.890
Junior High School	10	18.5	9	16.7	19	35.2	
Senior High School	6	11.1	7	13.0	13	24.1	
University	5	9.3	7	13.0	12	22.3	
Working status							
Working	16	29.6	9	16.7	25	46.3	0.289
Housewives	11	20.4	18	33.3	29	53.7	
Family income							
< IDR1,750,000	9	16.7	12	22.2	21	38.9	0.137
> IDR 1,751,000	18	33.3	15	27.8	33	61.1	
Type of delivery							
Vaginal	22	40.7	20	37.0	42	77.7	0.200
Section Caesarian	5	9.3	7	13.0	12	22.3	

Table 2 showed the mean of pre-test in the intervention group and control group were 29.034 and 30.22, respectively. The mean of post-test in the intervention group and control group were 28.19 and 30.15, respectively. The pair t-test results showed that there were significant differences between pre-test and post-test in intervention group ($p < 0.05$) and no significant difference between pre-test and post-test group in control group ($p > 0.05$).

Table 2. The differences of pre-test and post-test scores in the intervention group and control group

	Group	n	mean	SD	p
Intervention	Pre-test	27	29.04	7,23	0.003
	Post-test	27	28.19	6,79	

	Group	n	mean	SD	p
Control	<i>Pre-test</i>	27	30.22	7.55	0.16
	<i>Post-test</i>	27	30.15	7.54	

Table 3. showed that the mean of pre-test score in the intervention group and control group were 29.04 and 30,22. respectively. The independent t-test result showed that there was no significant difference of pre-test scores between intervention and control group ($p>0.05$). Table 3. showed that the mean of post-test score in the intervention group and control group were 28.18 and 30.19. respectively.

The independent t-test result showed that there was significant difference of post-test scores between intervention group and the control group ($p<0,05$). These results indicate that there was a significant difference in post-test scores after provided a mobile phone application (*MASI*) between the intervention group and control group.

Table 3. The differences of pre-test and post-test scores between the intervention and control group

	Group	n	mean	SD	p
<i>Pretest</i>	<i>Intervention</i>	27	29.04	7.23	0.53
	<i>Control</i>	27	30.22	7.55	
<i>Posttest</i>	<i>Intervention</i>	27	28,18	6,79	0.000
	<i>Control</i>	27	30,19	7.54	

DISCUSSION

The homogeneity test results in this study showed that there were no significant differences of demographic data between intervention and control group. This study found that the mean of the respondents' age in the intervention group and the control group were 29 years old and 31 years old, respectively. The respondents' age were in the range of childbearing age. According to the Central Statistics Agency (2019), the majority of Indonesian female in childbearing age ranged from 15 to 49 years old. The majority of respondents in this study graduated Junior High School.

This results in line with the data from Central Statistic Agency which stated that the majority of Indonesian graduated Junior High School are 90.71% and 89.55% in urban areas and rural areas, respectively (Central Statistics Agency, 2019). The low education level might due to the study setting is in rural area. The majority of respondents in this study were housewives. This result in line with previous study results which showed that the majority of respondents were housewives so, they had time to looking for information and practice several strategies to prevent and overcome breastfeeding problems (Susanto, Anggraeni, & Susmarini, 2017).

This study showed that the majority respondents had family income more than minimum regional wage. Previous study revealed that family income had no significant effect on knowledge and incidence of breastfeeding problems (Susanto, Anggraeni, & Susmarini, 2017). It might due to managing breastfeeding problems do not require high cost so breastfeeding women may solve the breastfeeding problems without any expense.

The majority of respondents in this study giving birth per-vaginal. Respondent in this study reported that they experienced sore nipples, breast engorgement, and swollen breast. The breastfeeding problems commonly occur among post vaginal delivery mothers were sore nipples, swollen breasts, blocked milk ducts. Post section caesarian women may experience delayed breastfeeding which cause breast engorgement and

lactation physiological process disturbances (Boskabadi, Ramazanzadeh, Zakerihamidi, & Omran, 2010).

There were no differences of the breastfeeding problems between the intervention and the control group before being given a mobile phone application. The incidence of breastfeeding problems may be influenced by various factors such as age, economic status, early pacifier use (Margawati, 2017), history of breast surgery (Eglash & Simon, 2010), type of exercise, early breastfeeding initiation, breastfeeding attachment, prematurity, experience, breastfeed 8 times per day, cultural beliefs, and lack of support (Boskabadi, Ramazanzadeh, Zakerihamidi, & Omran, 2014).

The results in this study showed that there were significant differences breastfeeding problems before and after provided MAPSI application. Several previous study found that a mobile phone application may increase respondent's knowledge. This was in accordance with previous study which showed that an android based application effective to increase husband's knowledge and husband's support in exclusive breastfeeding (Budianto & Handayani, 2017).

The results of another study found that the use of the Smart Gadget application (Gapin) was effective to increase adolescent's knowledge and attitudes about premarital sex (Turah, 2018). There was no breastfeeding problems' knowledge decrease in the control group, this study result in line with previous study result which revealed that there was no breastfeeding problem's change among control group in posttest (Susanto, Anggraeni, & Susmarini, 2017), it might due to there is no information obtained in the control group. Individuals who do not get information stimulus have no knowledge and attitude increasing (Wawan & Dewi, 2010).

The results of this study indicate that there were differences of breastfeeding problems between the intervention and the control group after provided a mobile phone application. A mobile phone applications was an effective media to increase knowledge, attitude, and health practice (Budianto & Handayani, 2017). Previous study proved that the Smart Mother Healthy Baby (BCBS) smartphone application was effective to increase the pregnant women's knowledge and attitude about childbirth (Agustina, 2019).

The media used in this study was a smartphone application which used widely as a learning method in education and health sector nowadays (Divya & Kumar, 2016). Indonesian postpartum mothers choose to access information related to breastfeeding using internet because it is easy to use and provided fast information (Anggraeni, Aji, Setiyani, Kartikasari, & Rahmawati, 2018).

CONCLUSION

MAPSI-mobile phone application is effective to improve mother's knowledge about breastfeeding problems prevention. We recommend to the next study to develop MAPSI to address more complex breastfeeding problems.

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Original Research

Domestic Violence During The Covid-19 Pandemic

Irma Nurbaeti^{1*}, Tsal Tsa Khairunnisa²

^{1,2} Nursing Program, Faculty of Health Sciences, Universitas Islam Negeri Syarif Hidayatullah Jakarta

ABSTRACT

Background: *Coronavirus-19 (COVID-19) outbreaks experienced by all countries in the world followed by regional and national lockdown. Restriction movement in Indonesia since April 2020 – July 2021 has influenced people's lives. This situation tends to increase in cases of domestic violence.*

Methods: *Design was quantitatively descriptive research. Population was all married women who living with their partner during the pandemic COVID-19. A number sample of 106 women was recruited by snowball sampling. The study place at Cilegon city Banten Province, Indonesia in June 2021. Instrument for measuring domestic violence was South Asian Violence Screen consist of 11 items; and Scale of Economic Abuse questionnaires Indonesia version consist of 26 items. Data collection was done by online and analysis data performed by frequency distribution*

Results: *The results found that 41 (38.67%) respondents experienced domestic violence during the COVID-19 pandemic. The most forms violence was psychic violence experienced by 32 respondents (30.19%) while 8 respondents (7.55%) experienced more than one violence. Family income (OR= 1.735 (95%CI= 0.697 – 4.322) and spouse' age (OR= 1.882 (95%CI= 0.529 – 6.697) tend to get domestics violence.*

Conclusions: *Domestic violence during pandemic COVID-19 should be a concern of health workers. Women who are experience domestic violence sometime not dressed up to report. There must be ways and strategies to dare to speak up and report.*

ARTICLE HISTORY

Received : January 16th, 2022

Accepted : February 21th, 2022

KEYWORDS

covid-19, domestic violence, intimate violence, lockdown;

CONTACT

Irma Nurbaeti

✉ Irma.nurbaeti@uinjkt.ac.id

Nursing Program, Faculty of Health Sciences, Universitas Islam Negeri Syarif Hidayatullah Jakarta, Jln. Kertamukti No. 5 Pisangan, Ciputat Tangerang Selatan, Indonesia.

Cite this as: Nurbaeti, I., & Khairunnisa, T. T. (2022). Domestic Violence During The Covid-19 Pandemic. (JKG) *Jurnal Keperawatan Global*, 118-127. <https://doi.org/10.37341/jkg.v0i0.395>

INTRODUCTION

Outbreaks of COVID-19 caused a widespread impact both on the order of people's lives and on various public sectors such as economic, social, and of course health services (Haleem et al., 2020). One of the social impacts that occur in women is the increase in the incidence of Domestic Violence (UN, 2020). Domestic violence is any act against women that result in the onset of physical, sexual violence, psychological, and/or domestic neglect (the Ministry of Health the Republic of Indonesia, 2016). Since COVID-19 pandemic, domestic violence has increased.

The United Nations (UN) in 2020 stated that violence against women increased significantly globally after the COVID-19 pandemic. Violence against women is also largely caused by economic pressures, stress and also social restrictions as an effort to break the COVID-19 chain (UN, 2020). This condition is reinforced by an increase in reports of domestic violence cases in Cyprus, Spain which reached 20-25%.

The UK has also seen a significant increase of 40% (Bradbury-Jones & Isham, 2020). Not only the UK and Spain, the UN (2020) also reported that the increase in cases of violence in women reached 25-30% in France and Argentina a few days after the lockdown policy set by the government was set. In addition, data from the Legal Aid Institute of the Indonesian Women's Association for Justice also showed that there were 110 reported cases of domestic violence since the imposition of Large-Scale Social Restrictions from March 16 to June 20, 2020.

The COVID-19 pandemic caused changes and policies that restrict people to do everything outside. Social distancing policies, office closures (work from home) and school from home set by government affected countries indirectly force every activity to be carried out in the house. When spending time indoors, families spend more time in close contact. Simultaneously, disruption of livelihoods and the ability to earn a living will significantly reduce access to basic necessities and health services can lead to the onset of household stress.

Decreased social access exacerbates domestic violence, women will have difficulty contact with family and friends who act as support givers and complaints (Roesch et al., 2020). Lockdowns organized by several countries also led to an increase in workload. Housewives are considered responsible for feeding, taking care of the house and also the whole family. School closures also tighten the burden, where mothers must also guide their children to study at home (Barbara et al., 2020).

The COVID-19 pandemic caused changes and policies that require people to do everything at home. Social restrictions make the community inevitably only able to interact with families who will get boredom. Women in pandemic times, especially housewives, experience an increase in workload. In addition, the declining and psychological economic side that is affected by the pandemic is increasingly squeezed household stress. The phenomenon of domestic violence is also still considered taboo and the number of reported events only a piece of actual occurrence. The increase in domestic violence cases during the pandemic that has been estimated is not in accordance with the reported case in the real data.

Afandi et al (2017) found in Pekanbaru, Riau province, Indonesia, case of Domestic violence before pandemic COVID-19 was 10.9% with victims were almost female (93.8%). Furthermore, Aisyah and Parker (2014) in their qualitative study found that marriage women perceived if they had difficulties to escape from domestic violence cause of men's authority, society norm and moral righteousness, also adequacy as breadwinners.

It is belief if domestic violence rises during pandemic COVID-19, but limitation of study. In the other hand, the online reporting system imposed by local government not be done optimally. In order to gain knowledge domestic violence during COVID-19 pandemic, researcher was interested to find out a picture of domestic violence in women during the COVID-19 pandemic in Cilegon city, Banten Province, Indonesia.

MATERIALS AND METHOD

This study is a study with descriptive quantitative design to describe the phenomenon of domestic violence as well as the characteristics of women who experience domestic violence. The sample number of 106 people, the sampling technique used in this study is Snowball Sampling with the following criteria: 1) respondents are married women; 2) respondents domiciled in Cilegon city; 3) respondents lived with a partner during the COVID-19 pandemic.

Instruments consist of three parts. First is demographic questionnaire. Demographic questionnaire including information about respondents and their spouses: the age of the respondent, the respondent's level of education, working status, number of children, family income, age of spouse, spouse' education.

Second is a modified questionnaire the South Asian Violence Screen (SAVS) that developed by Lenore et al. (2020). We translated into Indonesia version. SAVS, consist of 11 items, is used to assess forms of physical-sexual and psychological violence. SAVS modification had been tested on 20 respondents with a validity score range of 0.590 – 0.978 and a Cronbach alpha score of 0.939. The categorization results of this questionnaire on each domain form of violence with a score of ≥ 9 were declared to be experiencing physical-sexual and psychological violence.

Third questionnaire is to examine forms of domestic neglect or economic violence namely modification of the Scale of Economic Abuse questionnaire (SEA) which developed by (Adams et al., 2008). We translated into Indonesian version consist of 26 items. SEA had been tested validity and reliability to 20 respondents in April 2021. Result of a validity score in range of 0.433 – 0.985 with a Cronbach alpha score of 0.982. The categorization of assessments in this study using the median value in the study. A score of ≥ 81 as cut off participants experienced economic violence or domestic neglect.

Data collection was conducted after getting permission from local government in Cilegon and obtained ethical clearance. Data collected by online through google form in one month started June to July 2020. Researchers in this case asked for assistance to officer at women's empowerment office of Cilegon City to find respondents whom met inclusion criteria.

Researcher then contacted the candidate of respondents, gave explanation about research including purpose, benefit, confidentiality and participant could be withdrawn anytime without any consequences. They filled out the informed consent after agreeing to participated in this study. Finally, Researcher provided an online form to the respondent, the they filled around 15 minutes.

Respondents sent back the researcher after filled out the questionnaire. Respondents who had been selected then, next send to the prospective respondents who if in accordance with the criteria of inclusion and with regard to the content of the questionnaire continuously till the number of samples was completed. Univariate analysis uses frequency and percentage distributions. The univariate analysis described Characteristics of respondents, domestic violence including physical violence, psychic violence, sexual violence and domestic neglect in the pandemic period; and violence based on characteristics and added analysis for odd ratio (OR).

This research has been declared to pass the ethics clearance by the ethics committee of the Faculty of Health Sciences of UIN Syarif Hidayatullah Jakarta with approval number Un.01 / F.10 / KP.01.1 / KE. SP/04.08.029/2021. All respondents in this study had been given a written research explanation and also agreed to be research

respondents with informed consent. In an effort to protect respondents, the identity of the respondent will be kept confidential and will not be disseminated.

RESULTS

A total of 106 respondents was recruited in this study. The finding showed that age of respondents mostly in range of less than 60 years old (99.06%), half of respondents got bachelor education (50.94%), more than half was a working woman (54.71%), more than two-third had 2 or more children, more than half had family income more than US\$300, almost all have had spouse age less than 60 years old and more than half of spouse' education was bachelor and magister education (Table 1):

Table 1. Respondent' Characteristics

Respondent' Characteristics	n	%
Age (yo)		
< 40	53	50.00
40 – 60	52	49.06
> 60	1	0.94
Level of Education		
Elementary	1	0.94
Junior High School	3	2.83
Senior High School	35	33.03
Bachelor	54	50.94
Magister	13	12.26
Working Status		
Employed	58	54.71
Housewife	48	45.29
Number of Children		
0	8	7.54
1	17	16.04
2 or more	81	76.42
Family Income		
<= Rp. 4.246.081,- (eq <=US\$ 300)	49	46.23
> Rp. 4.246.081,- (eq > US\$ 300)	57	53.17
Spouse' age (yo)		
< 40	48	45.29
40 – 60	55	51.88
> 60	3	2.83
Spouse' education		
Junior High School	1	0.94
Senior High School	45	42.46
Bachelor	52	49.06
Magister	8	7.54

The results showed that 41 (38.67%) of respondents experienced Domestic Violence. The most form of domestic violence during the COVID-19 pandemic was psychological violence (30.19%). Furthermore, a total of 8 (7.55%) respondents experienced more than one form of violence: physical – sexual, psychological and

domestic neglect during the COVID-19 pandemic and 1 respondent reported physical-sexual violence (Table 2).

Table 2. Domestic Violence Form

Violence Form	Yes		No	
	n	%	n	%
Physical - sexual	1	0.94	105	99.06
Psychological	32	30.19	74	69.81
Physical - sexual and Psychological	5	4.72	101	95.28
Physical-sexual, Psychological and Domestic Neglect	3	2.83	103	97.17
Total	41	38.67%	65	61.32%

Then we continue analysis domestic violence and respondent's characteristics. Based on table 3 showed that domestic violence nearly experienced by all characteristics of respondents. Family income and spouse' age tend to experience domestics violence in this study. Family that having low social-economics (income same or less US\$ 300) at risk experience domestics violence 1.74 times (95%CI 0.697 – 4.32) than family eith income higher than US\$ 300. Spouse' age contributed 1.88 times (95% CI= 0.529 – 6.697) do acting domestics violence to their wives.

Table 3. Domestic Violence and Respondent's Characteristics

Characteristics	Domestic Violence				OR (95% CI)
	Yes		No		
	n	%	n	%	
Age (yo)					0.783
< 40	18	34.00	35	66.00	(0.194 – 3.164)
40 – 60	23	45.09	29	54.81	
> 60	0	0	1	100	
Level of Education					0.815
Elementary	0	0	1	100	(0.434 – 1.530)
Junior High School	2	66.67	1	33.33	
Senior High School	18	51.43	17	48.57	
Bachelor	15	27.78	39	72.22	
Magister	6	46.15	7	53.85	
Working Status					0.756
Employed	23	39.65	35	60.34	(0.298 – 1.920)
Housewife	18	37.50	30	62.50	
Number of Children					0.805
0	4	50.00	4	50.00	(0.499 – 1.300)
1	3	17.65	14	82.35	
2 or more	34	41.98	47	58.02	
Family Income					1.735
<= Rp. 4.246.081,- (eq <=US\$ 300)	17	34.69	32	65.31	(0.697 – 4.322)
> Rp. 4.246.081,- (eq > US\$ 300)	24	42.11	33	57.89	

Characteristics	Domestic Violence				OR
Spouse' age (yo)					1.882
< 40	15	31.25	33	68.75	(0.529 – 6.697)
40 – 60	25	45.45	30	54.55	
> 60	1	33.33	2	66.67	
Spouse' education					0.479
Junior High School	1	100	0	0	(0.222 – 1.035)
Senior High School	20	44.44	25	55.56	
Bachelor	19	36.54	33	63.46	
Magister	1	12.50	7	87.50	

DISCUSSION

The results showed that 38.67% of respondents experienced domestic violence. The figure is equal to the incidence of violence in the UK which reached 40%. This figure is higher than the UN report in 2020 that violence against women reached 25-30% in France and Argentina and in Spain in a range 20-25% (Bradbury-Jones & Isham, 2020).

Some of the things that can be behind the occurrence of domestic violence include a decrease in income and an increase in household spending during the COVID-19 pandemic, lockdown policies, work from home or study from home. UNICEF reported that the most prominent impact of the COVID-19 pandemic in the household sector was a 74.6% drop in family income. The decrease in income during the COVID-19 pandemic was exacerbated by high spending during the COVID-19 pandemic. UNICEF stated that nearly a quarter (24.4%) of the 12,260 families interviewed in the economic analysis stated that their spending increased due to high food prices during the COVID-19 pandemic. Both of these factors can increase household stress during the COVID-19 pandemic that can cause domestic violence (da Silva et al., 2020).

Reported that lockdowns can be associated with feelings of anger, frustration and confusion (Brooks et al., 2020). Study from home and Work from Home simultaneously increases household stress. Parents are required to accompany children at home to learn and simultaneously also have to complete their own work. Research conducted by (Kartika et al., 2020) states that as many as 84 (66.7%) parents experience moderate stress while accompanying their children to school from home.

As a result of this situation, quarantine during the COVID-19 Pandemic will have more tension, the emergence of feelings of irritability, family conflict, and domestic violence and even violence in children (Janssen et al., 2020). Pandemics followed by economic downturns and also various policies that must be met at the same time can be a catalyst for tension in the relationship of stabbing that leads to the incidence of domestic violence.

This study shows that most mothers experienced as much psychological violence (30.19%), some even experience not only physical-sexual violence but also psychological and domestic neglect (7.55%). This yielded was similar with previous research. Research conducted by (Gosangi et al., 2021) found that physical violence due to domestic violence experienced an increase in incidents and also severity compared to the incidence of physical violence due to domestic violence that occurred during the three years before the COVID-19 pandemic.

This is reinforced by the research by Gebrewahd et al. (2020) that showed domestic violence increased during the pandemic by 24.6% with the highest forms of

violence being psychic violence (13.3%) followed by physical violence (8.3%) and sexual violence (5.3%).

Similarly, research (Gama et al., 2021) states that 13.6% experience domestic violence with forms of psychic violence (13%), sexual violence (1%) and physical violence (0.9%). The study found that psychic violence (37.7%) followed by physical-sexual violence (8.5%) and most recently domestic neglect (2.8%).

The results of the study found that women in the middle adult (40- 60 years old) experienced the most domestic violence than women of other age groups. This is in line with the results of the study (Maidarti, 2013) women over the age of 35 experienced more domestic violence than those under the age of 35. At this age there are several things that cause disputes in stabbing. In addition, Hurlock (2010) states that in adulthood, it is a time when there is a change in role where their children have started to leave the house and couples again become dependent on each other.

The relationship between gender roles and dominance is a core problem for domestic violence. The gender role of men embraced by the community believes that the husband should act as a leader of the household, the higher education of the wife than the husband can hurt the role of men as leaders. When the role of leader and his dominance in decision-making in the family threat men will tend to use violence against his wife to reassert his position as a leader of the household (Bonnes, 2016). Couples who have different educational differences also tend to have different views on the division of homework, childcare, overcoming financial problems and also decision making.

When women improve education when their partners have a low education, this can make couples feel insecure especially when women begin to have perspectives on gender equality in the household (Bonnes, 2016). Furthermore, according to (Abramsky et al., 2019), women who contribute more than their partners in family finances will increase the risk of domestic violence in physical and sexual form but not in the form of domestic neglect. Families with high incomes tend to be easier to overcome family problems, but when women contribute more than their partners this can cause household losses, women tend to take issue with their partner's inability as the head of the family that will lead to poor relationship dynamics.

Domestic violence during COVID-19 pandemics also occurs in some developing countries that can be considered similar to Indonesia. A survey conducted by The Jonno Foundation or human rights organization in Bangladesh reported that 1,672 women and 424 children experiencing domestic violence for the first time since the enactment of the lockdown in the local area (Manusher Jonno Foundation (MJF), 2020). In addition, The National Commission for Women in India reported a 2-fold increase in complaints of violence against women through helplines compared to 2019 (607 to 1477 cases) (United Nation ESCAP, 2021). Furthermore, Fiji reported an extreme increase in helpline used during the lockdown period, finding 87 cases in February, 187 cases in March and reaching 527 cases in April (UN ESCAP, 2021).

This study had some limitations. The study was conducted online form, whereas researchers did not face physically with respondents and researcher could not dig further the exact of domestic violence experienced by respondents. A setting study in one city in Banten Province where Banten Province consist of eight districts. Snowball Sampling technique where respondents will recommend the next proposed respondent, this technique provided mostly similar characteristics.

CONCLUSION

Domestic violence should be a concern on the part of all sides. Nearly half of the respondents experienced domestic violence during the COVID-19 pandemic in the city of Cilegon. Of the three forms of domestic violence, psychic violence is the most common form of violence during the COVID-19 pandemic. Women generally experience domestic violence but not all are dressed up to report. There must be ways and strategies for women who experience violence on the ladder to dare to speak up and report.

ACKNOWLEDGEMENT

We would like to thanks to UIN Syarif Hidayatullah Jakarta Indonesia which provide opportunity to conduct this study, officer Women's and Children Protection Area Cilegon City and also to all women who participated in this study.

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