



# The Relationship Between Age and Anxiety Levels Of Emergency Room Nurses in The Covid-19 Era

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## ABSTRACT

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**Background:** This study aims to determine the relationship between age and anxiety levels of nurses working in the Emergency Installation during the Covid-19 pandemic era at the Yogyakarta Special Region Private Hospital. **Methods:** This research is a correlational non-experimental quantitative retrospective study with a cross-sectional approach that aims to find answers to the correlative relationship between variables and observations of events that have occurred. The research population is nurses who work in the Emergency Installation of Private Hospitals in Yogyakarta. The sampling technique used in this research is purposive sampling. Statistical test analysis using Spearman's test. **Result:** The relationship between the two variables is unrelated or uncorrelated with the value of Sig. (2-tailed) 0.183, the correlation strength level is very weak and the direction of the relationship is negative with the Correlation Coefficient of -0.174. **Conclusion:** The results of the statistical test show that there is no relationship or correlation between age and the anxiety level of nurses working in the emergency room of a private hospital in the Special Region of Yogyakarta during the Covid 19 pandemic.

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## 1. Introduction

The international scope is currently in an uproar with the discovery of a new type of coronavirus in early 2020 called the novel coronavirus (2019-nCoV or COVID-19) in the city of Wuhan, China. The World Health Organization (WHO) has declared COVID 19 a public health emergency of international concern. Covid19 is a new disease that has not been identified. Acute respiratory illnesses such as fever, cough, and shortness of breath are common symptoms of COVID-19 infection [1].

The World Health Organization, which we will later call WHO, submitted data on confirmed patients as of October 9, 2021, there were 236,599,025 cases. According to the information provided by WHO (2021), confirmed patient data in Southeast Asia as of 9 October 2021 totaled 43,300,384 cases [1]. Meanwhile, based on data from the Ministry of Health of the Republic of Indonesia, (2021) Indonesia with a population of 269,603,400 people. there are currently a total of 4,116,890



confirmed cases. Meanwhile in the Special Region of Yogyakarta, according to KPCPEN (2021), currently there are a total of 155,291 confirmed cases of COVID-19 [2].

The impact of the COVID-19 pandemic is not only physical health problems, but also many losses such as economic inequality, social inequality, and mental illness, and the people affected by the pandemic suffer. The mental disorders that emerged during the COVID-19 pandemic are anxiety, fear, stress, depression, panic, sadness, frustration, anger, and denial. The mental health of 1,257 health workers treating Covid19 patients with symptoms of depression in 34 hospitals in China 50% anxiety 45% insomnia 34% mental disorders 71.5% [3].

Information from China, 164 health workers (32.03%) had direct contact with the care patients infected with COVID-19. The effect of this is that the prevalence of anxiety among health workers is 12.5%, with 53 workers suffering from mild anxiety (10.35%), 7 workers experiencing moderate anxiety (1.36%), and 4 workers experiencing severe anxiety (0,78%) [4]. In Indonesia, based on the results of research by FIK-UI and IPKJI (2020), the response that most often appears to emergency room nurses when they work is anxiety and tension as much as 70%. High anxiety rates in nurses can have a negative impact [5].

Anxiety is an emotional state that makes a person uncomfortable, a vague experience of helplessness, and anxiety is caused by something that is not clear [6]. Anxiety can persist or even increase in the absence of a truly threatening situation, and when these emotions grow beyond the actual danger, they become unable to adapt. Excessive anxiety is harmful to the mind and body and can even cause physical illness [7].

The aging process is a process that must happen to every human being, as well as every health worker in this case a nurse, they will experience this. As a result of the aging process in each individual is a decrease in the ability of the physiological functions of the body's organs. The ability of the cardiovascular system will decrease, and the ability of the immune system will decrease, including the ability to cope with stressor stimuli. The older a person gets, at a certain point his coping ability will decrease and this will have an impact on anxiety [6].

## 2. Metod

### Research Design

The research design in this study used a correlational non-experimental quantitative retrospective study design with a cross-sectional approach, aiming to find answers to the correlative relationship between variables and events that had occurred[8].

### Research Subject

Sixty nurses who carry out their mission in the Yogyakarta Private Hospital Emergency Installation

### Research Instruments

The data collection instrument in this study used the Zung Self Rating Anxiety Scale (SAS/SRAS) which had been tested for validity and reliability. The Zung Self Rating Anxiety Scale (SAS/SRAS) is a standardized English language questionnaire developed by William WK Zung. This questionnaire was then translated into Indonesian and used as a measure of anxiety which was tested for validity and reliability. Verification results of each questionnaire. The minimum value is 0.663 and the maximum value is 0.918. The significance level used is 5% or 0.05, which means the questionnaire is considered valid.

## 3. Data Analysis

Univariate analysis, analysis by plotting the distribution of the frequency and proportion of survey results on the age of the respondents and the level of anxiety of the respondents. This univariate analysis is intended to explain the characteristics of each research variable. The bivariate analysis aims to determine the relationship between the two variables. Because the scale of the data in this study is nominal and ordinal, this research is included in the non-parametric category and

does not require a normality test. The statistical test used the Spearman test to determine whether there was a relationship, the strength of the relationship, and the direction of the relationship.

### Univariate analysis

**Table 1. Characteristics of respondents by age (n=60)**

Age	N	%
20-30	24	40
31-40	19	31,7
41-50	17	28,3
Total	60	100,0

Data source: primary data (2022)

Table 1 provides information that the research respondents in this study were dominated by nurses aged 20-30 years (40%).

**Table 2. Anxiety levels of emergency room nurses in private hospitals in Yogyakarta (n=60)**

Anxiety level	n	%
20-44 Not anxiety	55	91,7
45-59 Medium levels of anxiety	5	8,3
Total	60	100,0

Data source: primary data (2022)

Table 2 provides information that the respondents in this study stated that they were not anxious as many as 55 nurses (91.7%), while those who experienced anxiety at the level of mild anxiety were 5 nurses (8.3%).

### Bivariate analysis

**Table 3. Relationship between age and anxiety level (n=60)**

	Anxiety levels				Total	Sig. (2-tailed)	Correlation Coefficient
	Not anxiety	Light level	Medium level	Severe anxiety levels			
Age (th)	20-30	21	3	0	0	0.183	-0.174
	31-40	17	2	0	0		
	41-50	17	0	0	0		
	>50	0	0	0	0		
Total		55	5	0	0	60	

Data source: primary data (2022)

The relationship between the two variables is unrelated or uncorrelated with Sig. (2-tailed) 0.183, the correlation strength level is very weak and the direction of the relationship is negative with the

Correlation Coefficient of -0.174. The correlation coefficient is negative, meaning that the relationship between the two variables is negative or inversely proportional to each other. As a person's age increases, the level of anxiety decreases and vice versa.

## 4. Discussion

### Discussion of respondents by age

The results of the univariate analysis of the characteristics of respondents based on age were dominated by respondents aged 20-30 years with 24 respondents (40%). Research that has also been conducted by previous researchers states that the dominant respondents are respondents aged 36-45 years totaling 35 people (61.4%) [9]. Other studies provide information that respondents who have a dominant level of anxiety are respondents the age of the elderly (60-74 years) [10].

Theoretically, it can be explained that degenerative changes that occur in respondents and which affect anxiety scores are changes in the function of the Gamma-Amino Butyric Acid (GABA) system. As a person gets older, the affinity of the GABA system for receptors decreases. If the affinity of the GABA system for receptors begins to decrease, the chloride ion channels are more closed, and fewer chloride ions flow into the cell. The decrease in the number of chloride ions in the cell causes cell polarization to decrease. The ability of cells to be stimulated increases, and a person tends to be more prone to anxiety.

This explains why older people are more likely to experience anxiety than younger people. On the other hand, at a younger age, the affinity of the GABA system is better. If the affinity of the GABA system for the receptor is better (increases), chloride ion channels will open, and more chloride ions will flow into the cell. The increase in the number of chloride ions in the cell causes hyperpolarization of the cell. As a result, the ability of cells to be stimulated is reduced. A person becomes less sensitive to stressors, someone will be more likely to be resistant to stressors, and the incidence of anxiety becomes minimal. This explains why someone at a younger age is better able to withstand anxiety. Based on the explanation above, theoretically, it can be analyzed that individuals at a young age survive more in responding to stressors, are more resistant to anxiety, and have better immunity, which in turn survives more exposure to Covid-19 [10].

The real data of this study shows the opposite, individuals with a younger age dominate the respondents who experience anxiety. This real data is from the research of Widyasari (2010) [11]. This is probably because younger nurses do not have a sense of submission to the Almighty when they carry out their missionary work, while older people have more thoughts of fully surrendering to God Almighty in carrying out their missionary duties as Installation nurses Emergency.

### Discussion of respondents based on level of anxiety

The research data showed that 55 respondents (91.7%) did not experience anxiety and 5 respondents (8.3%) experienced mild anxiety. The theory used by previous researchers stated that the factors that influence the occurrence of anxiety are individual maturity and the threat of self-integrity [10].

Respondents in this study were at least 20 years old. At that age, according to WHO, it has been classified as an adult. This means that the respondents in this study may have understood the logical consequences of health workers who provide services to the front line during a pandemic. Thus, respondents are more receptive to responding to the possibility of being exposed to Covid-19.

The more a person accepts his condition, the less anxiety in him will become less and less. In addition, when respondents provide services in the ER, they are provided with sufficient Personal Protective Equipment (PPE) facilities to protect against Covid-19, they also receive additional vitamin and nutritional intake. For these things, it is very possible to make the prevalence of anxiety levels low, even in the classification of not experiencing anxiety. The research data showed that 55 respondents (91.7%) did not experience anxiety and 5 respondents (8.3%) experienced mild anxiety. When carrying out their mission, they are given level 3 PPE. This is in line with a study that states that several factors that affect the anxiety level of nurses in the Emergency Room when carrying out their mission as nurses are the availability of PPE [12].

### Discussion of the relationship between age and anxiety levels

Several factors influence a person to experience pandemic-era anxiety, including availability factors from outside the nurse and factors from within the nurse [7]. External factors, namely the provision of PPE that has met the standard, it can be said that they have been given level 3 PPE, including head coverings/head cups, N-95 masks, surgical masks, google, face shields, gowns, hazmat, plastic aprons, hand schoends, shoes cover. Internal factors are factors that come from within the body, for example, immunity, where nurses who serve in the ER have been given extra milk and vitamins for every work. Even though internal and external protection has been carried out, why are ER officers still exposed to Covid-19, the real condition is that nurses who carry out their mission in the ER are worried.

Aging is associated with various changes in the body's immune function, especially cell-mediated immunity (CMI) or a decrease in cell-mediated immunity. A person's immune capacity decreases with age, including the speed of the immune response to disease. Aging will also reduce specific and non-specific immune functions. This means that a person of older age will be at a higher risk of developing the disease because the production of immunoglobulins decreases. As a result, vaccinations given to the gerontic group are often ineffective against the disease. When the body can improve the immune system, then the quality of life of the individual increases. Thus, the law should apply, the older a person is, the greater the risk of contracting a disease, one of which is COVID-19. Related to this, the analysis is that the older the emergency room nurse who carries out her mission during the COVID-19 pandemic era, the greater the risk of being exposed to COVID-19, which in turn will increase the level of anxiety.

This is not the case. This study found data that the older the emergency room nurse who carried out her mission, the lower the level of anxiety. This is probably because younger nurses do not have a sense of submission to the Almighty when they carry out their missionary work, while older people have more thoughts of fully surrendering to God Almighty in carrying out their missionary duties as Installation nurses Emergency.

Why anxiety can affect the body's immunity [13], the fact is, short-term stress can help people. For example, before a test or interview, tension and anxiety can develop quickly and intensely. Such good stress is beneficial because it can temporarily increase energy and alertness. But in the end, you can improve your performance. However, excessive stress can be harmful to the body. Anxiety can be characterized as a form of long-term stress. When the brain senses a threat, it activates a fight-or-flight response. According to the Institute for Healthy Living, this process is regulated by the sympathetic nervous system, increasing the chances of survival in dangerous situations. It does this by leveraging the resources of lower priority features such as immunity and digestion. Then channel resources to fight.

This reaction involves the release of large amounts of stress hormones such as cortisol and norepinephrine throughout the body. Any kind of anxiety can release these stress hormones. Changes in physical function due to stress and anxiety hormones can cause various physiological changes. For example, decreased immune function or increased inflammation. According to the Institute for Healthy Living, about 80 percent of illnesses can be caused or exacerbated by stress. Left unchecked, anxiety, panic, stress, anxiety, and depression can compromise the effectiveness of the immune system. As a result, you are more susceptible to disease.

Psychology Today states that when the immune system is weakened, it is more likely to catch and infect the circulating virus and spread it to the people around it. In short, emotional or mental health can affect immunity. Both panic, anxiety, stress, and depression can damage the immune system. In a study entitled The relationship between work fatigue and work stress of nurses at the Yarsis Islamic Hospital, Surakarta, it was shown that there was a relationship between fatigue and work stress that caused anxiety. From Kendall's tau-b test, a correlation coefficient of 0.742 was obtained with an asymp sig value of 0.00 less than 0.01 which means there is a relationship between fatigue and work stress, where the respondents in this study were 20-25 years old [11] [14].

## 5. Conclusion

A total of 55 respondents (91.7) did not experience anxiety and only 5 respondents (8.3) with mild anxiety with details of 3 respondents aged 20-30 years and 2 respondents aged >30-40 years. There is no relationship between age and level of anxiety, the value of Sig. (2-tailed) 0.183 and Correlation Coefficient -0.174.

## 6. Suggestion

Even though there is no statistically significant relationship between age and anxiety levels, anticipatory action is still needed. In theory, it is stated that the older he is, the more at risk he is for anxiety which in turn results in a decrease in body resistance. Nurses who are >41 years old, still need level 3 PPE, good nutritional intake, and a balance of rest and activity. For nurses aged <40 years serving in the ER, health protocols according to standards must be a personal need, praying by submitting to God's provision during and after providing services is a wise step.

The protective measures that have been given by the hospital to all health care workers in the ER, including nurses who play a role in implementing health services on the front line should be maintained, however, it may be necessary to have a team that works for a long time as a special companion for nurses. who is exposed to COVID-19? As we all know the COVID-19 pandemic is not over yet. It is necessary to develop similar research in a follow-up study. Analysis of factors that influence the incidence of exposure to emergency room nurses by Covid-19 using more homogeneous respondents.

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