

The Relationship of Work Stress and Workload to Work Fatigue in Nurses During The Covid-19 Pandemic

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ABSTRACT

The improvement of the quality of hospital services continues to be done by evaluate fatigue of nurse work. Nurse work fatigue is a complete criterion not only regarding fatigue that is physical and psychological only, but has more to do with a decrease in physical performance, feeling tired, decreased motivation, and decreased work productivity. One of the factors that affect nurse ape fatigue is workload and work stress. The method is qualitative, using design cross sectional study, carried out in February - March 2022. The sample in this study was 64 nurses, taken with the technique of total sampling. Using univariate, bivariate analysis (with Chi Square test). This study shows that most respondents at Bintaro IMC Hospital have heavy workload (67%), very heavy (33%) and work stress with heavy category (75%) and nurse fatigue in high category (36%), very high (23%), then there is a relationship of workload and stress of nurses to nurse work fatigue at IMC Bintaro Hospital (P Value = 0.000).

Keywords: Workload, Work Stress, Work Fatigue

INTRODUCTION

A nurse is a person who has passed higher education in nursing, both at home and abroad recognized by the Government in accordance with the provisions of the Laws and Regulations (1).

The emergence of 2019-nCoV has attracted global attention, and by January 30 the WHO had declared COVID-19 a public health emergency of international concern (Dong et al, 2020). At first this virus was suspected to be due to exposure to the huanan seafood wholesale market which sells many species of live animals. This disease quickly spread in the country to other parts of China (Dong et al., 2020) from December 18 to December 29, 2019, there were five patients treated with acute respiratory distress syndrome (ARDS) (Ren L et al., 2020). From December 31, 2019 to January 3, 2020, this case increased rapidly, marked by the reporting of 44 cases (Susilo et al., 2020).

According to the Ministry of Health, the COVID-19 pandemic period is very important in doing its job. Workers who are at the forefront of pandemic response should get more attention and protection. Health workers have an important role in carrying out health services in hospitals. Nurses have a workload accompanied by high workloads, especially for nurses who work in hospitals. This is because nurses have a great role and responsibility (2).

While treating Covid-19 patients even though they have used PPE, the high workload is due to the increase in the number of infected patients during a pandemic which is often not balanced with hr capacity which is at risk of contracting it as a type of disease, especially the infection itself is caused by the risk of the work environment, work stress or weakened endurance due to increased workload. The workload is tremendous, especially those who may be in contact with suspected or confirmed cases, due to high cases of infection, loss of control, lack of experience

in managing the disease, always a lot of work, fatigue, feedback, negatives from patients, anxiety about to be infected, perceived social stigma, significant lifestyle changes, quarantine and family support, and inadequate protection (Weissgerber 2016).

If the nurse in charge gets a workload that exceeds her ability so that the nurse is unable to fulfill or complete her work, it can result in work stress for the nurse (Kristiningsih 2019).

Work stress becomes a risk to the health and safety of workers when the work done exceeds the capacity, resources, and ability of workers to be carried out on a prolonged basis (ILO, 2016). Work stress can cause health problems such as feeling tired/ tired, out of strength, dizziness, and indigestion (Munandar, 2006).

Work fatigue is a complete criterion not only related to physical and psychic fatigue, but it is more related to a decrease in physical performance, a feeling of fatigue, a decrease in motivation, and a decrease in work productivity (Maurites, 2012).

IMC Hospital is one of the type C hospitals in South Tangerang which has 49 beds and has treated 773 Covid-19 patients since April 2020 – July 2021. The number of nurses at IMC Hospital is currently 57 people, some of the total nurses affected by Covid-19 are 30 people. Based on the results of interviews with the head of the field and 6 deputy unit heads, it was said that the IMC nurses at the beginning were not ready to treat Covid-19 patients due to anxiety and lack of HR resulting in stress and fatigue. From the results of giving a work stress questionnaire to 6 implementing nurses, it was found that 5 nurses experienced heavy work stress and 1 person did not experience work stress, from the results of giving workload questionnaires in obtained 6 nurses experienced heavy workload, and from the results of the questionnaire of work fatigue questionnaire 4 nurses experienced work

fatigue and 2 nurses experienced low work fatigue.

Based on the above problems, researchers are interested in conducting a study on "The relationship of workload and work stress to work fatigue in nurses during the covid-19 pandemic".

METHOD

This type of research is observational analytic with a cross-sectional design. This study consists of 3 variables. The study was conducted from July to September 2021 at IMC Bintaro Hospital.

The population in this study was all nurses who worked at IMC Bintaro Hospital which amounted to 57 nurses with a sampling technique, namely total sampling because the total population was less than 100.

The types of data used are primary and secondary data. The primary data of each variable were collected using questionnaires that had been tested for validity and reliability. Secondary data was obtained from the nursing manager regarding the number of nurses and hospital profile data.

This study used univariate and bivariate data analysis. Univariate analysis is used to determine the frequency distribution of independent and dependent variables under study. Bivariate analysis is used to determine the presence or absence of relationships between variables. In this study, all variables studied were unpaired categorical data, so the test carried out was the chi square test.

RESULTS

1. Univariate analysis results

This analysis was carried out to determine the picture and distribution of the research variables, namely nurse fatigue as a dependent variable. Workload and work stress as independent variables. The univariate analysis of this study is explained according to each variable, namely:

Table 1 Frequency Distribution of Respondents at IMC Bintaro Hospital, South Tangerang in 2022

Karakteristik Responden	Frekuensi (f)	Presentase %
Usia		
20 - 30 tahun	57	89%
31 - 40 tahun	6	9%
51 - 60 tahun	1	2%
Total	64	100%
Masa Kerja		
< 1 tahun	12	19%
1 - 4 tahun	41	64%
5 - 9 tahun	8	12%
10 - 14 tahun	3	5%
Total	64	100%
Jenis Kelamin		
Laki - Laki	12	19%
Perempuan	52	81%
Total	64	100%

Source: Primary Data, 2021

Based on the results of the study in table 1, out of 64 respondents, it was shown that most of the respondents had the age of 20-30 years, namely 57 respondents (89%). And from 64 respondents, it was shown that most respondents had a working period of 1-4 years, which was 41 respondents (64%). based on the results of the study in table 5.1, out of 64 respondents showed that most of the respondents were female, namely as many as 52 respondents (81%).

Table 2 Distribution of Nurse Workload Frequency at IMC Bintaro Hospital, South Tangerang in 2022

Kriteria Beban Kerja	Frekuensi (f)	Presentase %
Rendah	18	28%
Sedang	0	0%
Berat	0	0%
Sangat Berat	46	72%
Total	64	100%

Source: Primary Data, 2021

Based on the results of the study in table 2. of the 64 respondents, it was shown that most of the respondents had a very heavy workload, which was 46 respondents (72%).

Table 3 Distribution of Nurse Work Stress Frequency at IMC Bintaro Hospital, South Tangerang in 2022

Kriteria Stres Kerja	Frekuensi (f)	Presentase %
Tidak Stres	16	25%
Stres Ringan	0	0%
Stres Sedang	0	0%
Stres Berat	48	75%
Total	64	100%

Source: Primary Data, 2021

Based on the results of the study in table 3. of the 64 respondents, it was shown that most respondents experienced severe stress, namely 48 respondents (75%).

Table 4 Frequency Distribution of Nurse Work Fatigue at Ichsan Medical Center (IMC) Hospital, Bintaro, South Tangerang in 2022

Kriteria Kelelahan Kerja	Frekuensi (f)	Presentase %
Rendah	26	41%
Sedang	0	0%
Tinggi	0	0%
Sangat Tinggi	38	59%
Total	0	100%

Source: Primary Data, 2021

Based on the results of the study in table 4. of the 64 respondents showed that most respondents experienced very high work fatigue as many as 38 respondents (59%).

2. Bivariate Analysis Results

This analysis was carried out to determine the relationship between the variables studied, namely between independent variables, namely workload and work stress with dependent variables, namely nurse work fatigue by using the Chi-Square test to see whether there is a relationship between independent variables and dependent variables based on the limit of alpha meaningfulness values of 0.05, meaning that if the pvalue is <0.05, it is concluded that there is a relationship between

independent variables and dependent variables.

Table 5 Results of a Bivariate Analysis of the Relationship of Workload to Nurse Fatigue

Beban Kerja	Kelelahan Kerja				TOTAL		P Value
	Rendah		Sangat Tinggi		N	%	
	N	%	N	%			
Ringan	17	26%	1	1,6%	18	28,1%	0,000
Sangat Berat	9	14%	37	57,8%	46	71,9%	
TOTAL	26	40,6%	38	59,4%	64	100%	

Source: Primary Data, 2021

Based on the chi square statistical test, the P value in table 5.5 of 0.000 can be concluded so that it can be concluded that there is a relationship between nurse workload and nurse work stress to work fatigue of nurses at IMC Bintaro Hospital, where if the P value < 0.05 means that there is a relationship between independent variables and dependent variables (Ha is received). and an OR value of 69,889, which means that a very heavy nurse workload is at risk of 69% of work burnout, with an average 95% confidence level of nurses with a workload of 8,187-596,584.

Table 6 Relationship of Work Stress To Nurse Burnout

Stres Kerja	Kelelahan Kerja				TOTAL		P Value
	Rendah		Sangat Tinggi		N	%	
	N	%	N	%			
Ringan	15	23,4%	1	1,6%	16	25%	0,000
Sangat Berat	11	17,2%	37	57,8%	48	75%	
TOTAL	26	40,6%	38	59,4%	64	100%	

Source: Primary Data, 2021

Based on the chi square statistical test, the Pvalue in table 5 was obtained by 0.000 so that it can be concluded that there is a relationship between the nurse's workload and the nurse's work stress to the work fatigue of the nurse at IMC Bintaro Hospital, where if the P value < 0.05, it means that there is a relationship between the independent variable and the dependent variable (Ha is received). And the OR value of 50,455 which means that nurses' work stress is at a 50% risk of nurses' work

fatigue. With a 95% confidence level the average of nurses with work stress is at intervals of 5,977 – 425,935.

DISCUSSION

1. Workload

Based on the results of research from 64 respondents, it showed that 46 respondents experienced a very heavy workload (72%). And those who experienced a low workload were 18 respondents (28%). According to the Journal Of Muslim Community Health, Rosiati, et al (2021). An excess level of workload can lead to the occurrence of work fatigue. Work fatigue allows for a decrease in performance. Work fatigue has various criteria, including physical and energetic fatigue. Fatigue that exceeds the threshold can make it difficult to concentrate on thinking, tired of talking and easy to forget the sign of fatigue is the willingness to work caused by monotony in the work of the length of work and excessive workload. The results of the study conducted by mulfiyanti (2020) showed that nurses who felt high fatigue as many as 43.1% of nurses with moderate workload as much as 61.5% of the research results obtained on the relationship of workload with work fatigue in nurses had a value of $p = 0.001$ ($p < 0.05$), meaning that there was a significant relationship between workload and work fatigue in nurses (3).

According to the Journal of Maritime Public Health, The workload received by nurses on duty increases when there is an emergency situation for patients, so nurses must concentrate more and must act quickly to deal with the patient's unstable condition. This is caused because the heavier the workload of nurses given, the more fatigue experienced by nurses (3). According to (Tarwaka, 2015), one of the causes of work fatigue is work activities. The existence of work activities results in the emergence of workloads based on the activities carried out earlier. Workload is a load or dependent that is obtained based on the work activities carried out. Workloads can be both physical workloads and mental workloads. Physical

workload involves muscle work or faal functioning of the human body.

2. Work Stress

Based on the results of research from 64 respondents, it was shown that 48 respondents experienced severe stress (75%). As well as respondents who did not experience stress as many as 16 respondents (25%).

According to the Journal of Community Medicine News Angelina Candra Dewi et al (2016), Work situations that are full of pressure or stress are associated with unpleasantness, such as anxiety, tension, loss of spirit, irritability, not working hard, and fatigue. A certain amount of stress can lead to innovative ideas and constructive outputs. Up to a certain point working with time limit pressure is a stimulating creative process. If you are too ambitious, have a large work drive or an excess workload, then work performance becomes lower. Stress is draining on energy and health. Signs of overload are irritability and fatigue.

According to the Journal of Industrial Hygiene And Occupational Health, Edwina Rudyarti (2021). Work stress experienced by nurses can be interpreted as a response from the individual, both psychological, physiological, and behavioral reactions to triggers from internal and external stressors that can be related to any type of work. High workload and demands can result in a decrease in employee productivity and stress so that it can harm employees or hospitals or companies and can pose a risk of illness for workers. Work stress arises due to increased job demands, conflicts, uncertainty about the tasks given, and the burden of responsibility carried by themselves. The impacts that occur caused by work stress such as symptoms of anxiety, irritability, feelings of sensitivity, boredom, feelings of tension, and experiencing dissatisfaction with what is received.

3. Work Fatigue

Based on the results of research from 64 respondents, it showed that 38 respondents who experienced very high work fatigue (59%). And respondents who experienced low work fatigue were 26 respondents (41%). According to the Journal of Maritime Public Health, Work fatigue occurs due to the faal function of the body and the working capacity of a person. A young person is able to do heavy work and vice versa if a person is old then the ability to do heavy work will decrease because he feels tired quickly and does not move agilely when carrying out his duties so that it affects his performance (3). The study is in accordance with mayasari's (2011) research in Pesik (2016) on differences in the level of fatigue of female nurses which states that fatigue is not due to a factor in a person's age. The number of activities carried out at the age of 21-34 years, although in theory fatigue is easier to experience by older people.

4. The Relationship of Workload to Work Fatigue

Based on the results of a study of 64 respondents, 46 respondents (71.9%) experienced a very heavy workload with a low fatigue rate of 9 respondents (14.1%), a very high fatigue rate of 37 respondents (57.8%). Meanwhile, 18 respondents experienced a low workload with a low level of fatigue as many as 17 respondents (26.6%), the level of fatigue was very high as many as 1 respondent (1.6%). With a P Value of 0.000, there is a relationship between Nurse Workload and Nurse Work Fatigue at Ichsan Medical Center (IMC) Bintaro Hospital, and an OR value of 69,889, which means that a very heavy nurse workload is at risk of 69% of work fatigue, with an average 95% confidence level of nurses with a workload of 8,187-596,584.

Workload is related to mental physical condition and emotional reactions,

if, if the load is excessive, it will cause fatigue both physically and mentally. Another opinion supporting this statement was put forward by Cai et al., (2020), who stated that the covid-19 pandemic caused an increase in both physical workload and mental workload in health workers. This happens because health workers have to use level 2 and level 3 PPE and the increased anxiety will transmit their families with the covid-19 virus, especially for health workers who live together with young children and the elderly. According to Riningrum (2016), that workload is a job that has a burden, both physical and mental burdens that must be borne by its workforce according to the type of time period that can occur due to many factors, such as the abundance of tasks of a physical and mental nature (lifting heavy loads, workplace conditions, heavy responsibilities to be completed and worked on), anxiety, occupational risks of lack of rest time, gender and even age. These workloads can come with different types of severity perceived by an individual, for example light workloads, medium workloads and even heavy workloads.

When viewed from the distribution of nurses, most nurses have a fairly productive age, which ranges from 20 to 30 years. At this productive age, of course, nurses have more optimal performance compared to those who have aged above that. This is in accordance with a statement which states that young employees generally have a stronger physique, dynamic and creative, so that in doing daily work, it will be easier for them to achieve maximum performance. Likewise, the statement that, a young employee who has a creative attitude will have a desire to move forward, high curiosity, energetic, open to accepting opinions, have high initiative, and broad and directed thinking that supports the achievement of optimal performance. Excessive workload can cause a decrease in the morale and motivation of nurses so this is one of the causes of work fatigue. Studies

of the factors causing work fatigue conducted on several thousand men and women from hundreds of companies for 20 years showed the presence of 6 influential factors in fatigue, one of which was excessive workload.

According to the Journal of Muslim Community Health, Rosiati, et al (2021). An excess level of workload can lead to the occurrence of work fatigue. Work fatigue allows for a decrease in performance. Work fatigue has various criteria, including physical and energetic fatigue. Fatigue that exceeds the threshold can make it difficult to concentrate on thinking, tired of talking and easy to forget the sign of fatigue is the willingness to work caused by monotony in the work of the length of work and excessive workload. The results of the study conducted by mulfiyanti showed that nurses who felt high fatigue as many as 43.1% of nurses with moderate workload as much as 61.5% of the results of the study obtained on the relationship between workload and work fatigue in nurses had a value of $p = 0.001$ ($p < 0.05$), meaning that there was a significant relationship between workload and work fatigue in nurses (3).

5. The Relationship between Work Stress and Work Fatigue

Based on the results of a study of 64 respondents, 48 respondents (75%) experienced severe work stress with a low level of fatigue as many as 11 respondents (17.2%), and a very high fatigue rate of 37 respondents (57.8%), while 16 respondents (25%) did not experience stress with a low level of fatigue as many as 15 respondents (23.4%) and a very high fatigue level of 1 respondent (1.6%). With a P Value of 0.000 which means there is a relationship between work stress and work fatigue of nurses at Ichsan Medical Center Hospital (IMC) Bintaro, and an OR value of 50,455 which means that nurses' work stress is very risky by 50% to nurses' work fatigue. With a 95% confidence level the average of nurses with work stress is at intervals of 5,977 – 425,935.

Stress is a change in the body's reaction when facing a new threat, pressure, or situation. When facing stress, the body will face the hormones adrenaline and cortisol. This condition makes the heart rate and blood pressure increase, breathing becomes faster, and muscles become tense. According to the Journal of Community Medicine News Angelina Candra Dewi et al (2016), Work situations that are full of pressure or stress are associated with unpleasantness, such as anxiety, tension, loss of spirit, irritability, not working hard, and fatigue. A certain amount of stress can lead to innovative ideas and constructive outputs. Up to a certain point working with time limit pressure is a stimulating creative process. If you are too ambitious, have a large work drive or an excess workload, then work performance becomes lower. Stress is draining on energy and health. Signs of overload are irritability and fatigue.

According to the Kesmas Journal, Widodo Haryono (2012). Stress is the inability to overcome the threats faced by human mental, physical, emotional and spiritual that at some point can affect the physical health of these humans. Stress is our perception of situations or conditions within our own environment. Another sense states that stress is a condition of tension that affects a person's emotions, thought processes, and conditions. If an employee experiences too much stress, it will interfere with the person's ability to face the environment and his work, the causes of work stress include a workload that is felt too heavy, urgent work time, low quality of work supervision, unhealthy work climate, inadequate work authority related to responsibilities, work conflicts, differences in values between employees and leaders who are frustrated at work.

The results of this study are also in line with those stated which state that the occurrence of work fatigue is caused by work stress. Selye (2012) revealed that stress is stress which is a positive force needed for a person

to produce high achievements. To produce high achievements requires a low level of work stress and to produce low stress requires understanding a positive perception regarding work fatigue from the work it handles. A certain amount of work stress can lead to innovative ideas and constructive outputs. Up to a certain point working with the pressure of a time limit can be a creative process that stimulates a person. A person who works at an optimal level shows enthusiasm, high spirits, clarity in thinking and careful consideration or calculation. Other studies emphasize that if there is no work stress, work challenges are also absent so that work performance tends to decrease. But if the work stress is too great, work performance will also decrease because work stress can interfere with the implementation of the work it faces. Therefore, factors that affect nurses' work stress such as emotions, thoughts, feelings, work situations and job demands need to be controlled to minimize the occurrence of work stress. However, it is also worth remembering that work stress is also necessary to encourage and motivate nurses to work.

Work fatigue in nurses is an important problem in the nursing service industry sector and can result in work accidents that can happen to patients and nurses themselves. Raftopoulos research (2012) states that fatigue contributes greatly to the incidence of work accidents. High levels of fatigue can increase work accidents. The International Labour Organization (ILO) shows that every year there are many workers who die as a result of work accidents caused by worker fatigue factors. In Ireland Health and Safety authorities state that fatigue can lead to errors and impact accidents on workers. The Jakarta Manpower and Transmigration Office also concluded that most of the accidents that occurred in the capital were caused by fatigue factors.

CONCLUSION

Based on the results of research and discussion about the relationship between workload and work stress on nurse fatigue at IMC Bintaro Hospital, it can be found out as follows:

1. Most of the age of nurses 64 nurses show that most nurses have the age of 20 – 30 years, which is 57 nurses (89%).
2. Most of the nurses' service life of 64 nurses shows that 41 nurses (64%) have a service life of 1 - 4 years.n.
3. Most of the sex of nurses from 64 nurses showed that as many as 52 nurses (81%) were female.
4. Most of the nurses at IMC Bintaro Hospital who experienced a very heavy workload were 46 respondents (72%). And those who experienced a low workload were 18 respondents (28%).
5. Most of the nurses at IMC Bintaro Hospital who experienced heavy work stress were 48 respondents (75%). And those who did not experience work stress were 16 respondents (25%).
6. Most of the nurses at IMC Bintaro Hospital who experienced very high work fatigue were 38 respondents (59%). And respondents who experienced low work fatigue were 26 respondents (41%).
7. There is a relationship between nurse workload and nurse work fatigue at IMC Bintaro Hospital (P Value = 0.000). with an OR value of 69,889.
8. There is a relationship between nurse work stress and work fatigue of nurses at IMC Bintaro Hospital (P Value = 0.000). with an OR value of 50,455.

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