

# Factors Affecting Nurse Fatigue During Covid-19 Pandemi (Nurse Case Study in Surakarta)

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**Abstract**— Currently, cases of people who are indicated and confirmed exposed to Covid-19 have increased higher. One area that has experienced an increase in Covid-19 sufferers is Surakarta. This is a challenge for nurses to be at the forefront of emergency situations for Covid-19 patients. Nurses are part of health workers who are at great risk in efforts to help cure Covid-19 patients. It is feared that the additional duties will make nurses suffer from work. This study aims to see what factors affect the work of nurses in the city of Surakarta. This study uses a descriptive analytic method using primary data sources. Primary data collection was carried out directly by interviewing 30 nurses who worked in the Covid-19 health office in the Surakarta area. Analysis of the data used in this study using the rank spearman. Based on the research results it can be seen that. There is one variable that affects the work of nurses, namely age. This can be seen from the significance value of the variable which is smaller than the alpha value of 0.008. It is feared that the age of having a job with work stress is because older nurses will tire more easily while working, in contrast to younger nurses who usually have better body conditions. Working hours had no effect on the work rate of nurses during the Covid-19 pandemic. This is because nurses get additional working hours due to the return of the patient so that more nursing care must be provided than usual. Work demands also do not affect hard work, especially in this pandemic, although nurses also have to use personal protective equipment, because the workload does not increase the burden on nurses.

**Keywords**— *Factors, Nurse, Fatigue*

## I. INTRODUCTION

Health service institutions are described by the existence of hospitals in regional areas with the function of providing health services for individuals who are then integrated into individuals engaged in the health profession, therapy and even diagnostic facilities with a controlled system and added coordination with the ultimate goal of creating improved public health from time to time [1]. The hospital basically has a general objective to provide excellent health services and to the maximum extent possible with the support of good health facilities and competent human resources. Human resources are an important component in hospital administration. Of course, the human resource in question is the presence of a competent and professional nurse workforce. This is especially so when the Covid-19 pandemic currently requires a large number of

nurses. The function of nurses in the hospital is to provide care and assistance for patients with the aim of helping improve health [2].

The work demands are high for nurses, especially during the Covid-19 pandemic. This also occurs in the inpatient installation which causes the need for nurses to provide nursing care and be ready for 24 hours in one full week. With this, it indirectly makes nurses have a workload and responsibility more responsible for providing nursing care to patients. The high work demands followed by high activity of nurses will lead to health problems in these nurses. Theoretically, the presence of lactic acid buildup is a trigger for work fatigue that occurs. The point is that the body needs energy from the results of the breakdown of glycogen [3].

Individuals who do work continuously will experience work fatigue which leads to decreased work productivity. This indicates the danger that work fatigue that occurs in the hospital will lead to work accidents. Fatigue at work will eventually affect these workers, causing job stress to emerge [4]. The specter that is feared by the hospital human resource management is the stress of the work of nursing health workers in the hospital. Internal factors and external factors are the causes of stress experienced by hospital nurses. The inner side that causes this is the characteristics of the individual nurse, while from the outside it is influenced by the hospital management or organization as well as the influence of the environment. Of course, stress experienced by health workers in the long term, both high and low, will lead to the quality of services provided [5][6]. The individual's ability to control himself will affect the level of stress felt by the nurse in dealing with work activities that cause stress [7]. The level of stress experienced by an individual certainly depends on the stressor that befell the individual [8].

One of the production factors owned by the company is human labor or human resources. Human power has an important role to make it possible to contribute as much as capital and means of production. Successful development is supported by human contributions as individual executing activities [9]. Work overload is influenced by tenure. A long working period or can be categorized as more than five years causes the workforce to experience more fatigue compared to

workers with a lesser working period (1 year). This is also because the work or activities carried out by human power are the same or monotonous from time to time so that these activities are statically taxing on the muscles which have an impact on muscle pain, bones and tendons. Boredom also affects the work fatigue experienced by workers so that monotonous work will lead to laziness before starting work because they are tired first [10].

The patient's recovery is also determined by the role or contribution of the nurse's service as a human resource or medical resource in the hospital [11]. In order for maximum service for one whole day or 24 hours, it is necessary to provide a bio-psychosocial-spiritual approach so that the services provided are mutually sustainable [12]. The optimal level of health service that is desired by patients is systematic and continuous which sometimes creates a separate burden for nurses, which triggers work stress experienced by nurses [13]. The stress rating shows that the nursing profession is ranked 27 out of 130 types of work according to the American National Institutes of Health (NIH) [14]. Easily stress is a condition of disturbance from within the individual's body that affects the performance of the mind due to the demands of changing life. Stress is influenced by the individual's daily environment and factors from within himself [15]. Stress is also a biopsychosocial tension caused by the many developmental tasks a person faces in his or her daily life, whether in peer groups, family, school, or work. Shift work is also felt to affect work fatigue so that in the work environment it is necessary to have conditioning in timing so that the workforce has good productivity when serving various patient demands. Research shows that there is an influence of nurses who experience stress on night shifts, but there are also studies that show no relationship between the two variables [16]. Basically, workers who experience fatigue do not only come from the industrial sector but also come from health services [17]. The greater the load level the workforce has, it will be proportional to the increased risk of fatigue. This indicates that there is a relationship between fatigue and workload [18]. The work environment also affects work fatigue so that workers should be able to enjoy their work followed by laughter with colleagues. This will make the work environment more comfortable between workers so that it supports team performance and results in faster work completion [19]. Based on the description given in the previous paragraph, this study aims to determine the factors that influence nurse fatigue during the Covid-19 pandemic.

## II. METHOD

This type of research is a descriptive analytic study using primary data sources. The sampling technique used was simple random sampling method. The population in this study were all nurses in hospitals in Central Java, while the sample used in this study were nurses who worked in hospitals in Surakarta. The location selection was done by using a purposive method or deliberately considering that Surakarta was once included in the

red zone due to the high number of Covid-19 patients. The number of samples used in this study were 30 nurses who were still actively working in hospitals in Central Java. The data used in this study are primary data taken directly by interviewing using a questionnaire. Analysis of the data used in this study using the rank spearman. Before the two were done, the data had first been tested for validity and reliability.

## III. RESULTS

Table 1 Frequency Distribution of Demographic Characteristics, Work Shifts, Work Period and Work Fatigue of Nurses During the Covid-19 Pandemic

Characteristics	Frequency (n = 30)	Percentage
<b>Age</b>		
≤ 40 years	23	76,70
> 40 years	7	23,30
<b>Gender</b>		
Female	10	33,30
Male	20	66,70
<b>Years of service</b>		
Old	24	80,00
New	6	20,00
<b>Work demands</b>		
Mild	6	20,00
Medium	9	30,00
Weight	15	50,00
<b>Work Fatigue</b>		
Very Tired	10	33,30
Tired	14	46,70
Not tired	6	20,00

Source: Primary Data Analysis 2021

Table 1 shows the frequency distribution of the study's demographic description plus data from age, gender, years of work, work demands and work fatigue on nurses during this pandemic. Table 1 shows that of the 30 nurses sampled in this study, 23 nurses were less than 40 years old, while the remaining 7 nurses were more than 40 years old. The dominance of nurses in this study was male as many as 20 people or 66.70% while female nurses were 33.30%. If viewed from the tenure of the nurses in this study, 80% of the nurses had worked for > 5 years and the remaining 20% were new workers <5 years. The work demands of nurses in this study indicate that 22 people (50%) nurses have heavy work demands, while 9 people (30%) nurses have a workload while the remaining 6 people (20%) nurses have light workloads. There is a pandemic. Covid-19 makes nurses more busy in hospital activities so there is a concern that there is work fatigue. There were 14 people (46.7%) felt tired from work, while 10 people (33.3%) admitted to being very tired and the remaining 6 nurses (20.0%) said they were not tired. This study identifies whether there is a relationship between age, years of service and work fatigue which is described in Table 3 below.

Table 2. Relationship Between Age, Working Period, Demographic Characteristics and Work Fatigue

Kelelahan Kerja								
Variabel	Sangat Lelah		Lelah		Kurang Lelah		<i>p-Value</i>	Rho
	n	%	n	%	n	%		
<b>Age</b>								
≤ 40 years	3	10	16	53	4	13	0,008	0.473
> 40 years	5	17	1	1	1	3		
<b>Gender</b>								
Female	3	10	4	13	3	10	0,853	‘-0.213
Male	5	13	13	43	2	7		
<b>Years of service</b>								
Old	5	14	14	47	3	10	0,000	‘-0,019
New	3	10	3	10	2	7		
<b>Work demands</b>								
Mild	2	7	3	10	1	3	0,585	0.154
Medium	3	10	5	17	1	3		
Weight	4	13	7	23	4	13		
<b>Work Fatigue</b>								
Very Tired	4	13	7	23	4	13	0.305	- 0.194
Tired	3	10	5	17	1	3		
Not tired	3	10	2	7	1	3		

Source: Primary Data Analysis 2021

Table 2 shows the identification of the relationship between age, sex, working hours, years of service, and the characteristics of work demands on the work fatigue of health workers, namely nurses. From the table, it can be seen that there is a relationship between age and work fatigue as seen from the spearman rank value ( $p = 0.008$ ) Rho 0.473. From these results it can be said that the more a person gets older, the fatigue of work will increase. In addition, Table 2 shows that there is no relationship between working hours, sex, years of work and job demands on nurses' work fatigue, indicated by the results of  $p > 0.05$ . Nurses who are male are more prone to experiencing work fatigue than female nurses. Another thing that can be seen is that nurses with higher working hours experience work fatigue more easily than nurses whose working hours are lighter with  $p = 0.000$ .

#### IV. DISCUSSION

Hospital management measures to reduce the level of work fatigue experienced by the nursing workforce by providing work counseling that work fatigue arising from increased activity and workload given by the institution in assigning workforce is the responsibility of the institution and individual responsibility plus the work that is carried out. carried out is a job that affects the life and death of patients and nurses is also one of the vanguard hopes of the Covid-19 problem. The hope is that with this understanding, nurses will become aware and can manage adequate rest patterns so that they can sort out which hours can work and which hours can be used for rest so that body recovery can be faster. This understanding also provides understanding for nurses when they feel unwell or feel very tired then they can provide reports

to hospital management so that services can be directed to the nurse.

Basically, overwork may be possible for nurses due to increased work activities. With this, the workload of the nurse increases. This happened along with the increasing number of Covid-19 patients today. The workload in question is not only a physical burden, but also a mental workload. The special task given by the institution to nurses during this pandemic is to provide direct nursing care with actions, the treatment process, and an evaluation of the problems that exist in patients, especially patients affected by Covid-19. The responsibilities carried out by nurses include administering drugs, laboratory examinations and so on which affect the healing of the patient so that the nurse needs to adjust the patient's physical, mental and spiritual needs so that the patient feels safe, comfortable and feels less suffering. This description shows that there are so many activities that nurses must do during the Covid-19 pandemic like today.

The results of the study prove that there is a relationship between the age variable and the work fatigue experienced by nurses who work in Surakarta as seen from the spearman rank value ( $p = 0.008$ ). As many as 16 nurses from 30 samples in this study admitted to being tired. This is reinforced by the use of PPE that nurses use when providing nursing care for both Covid-19 patients and others because this is a health protocol that must be carried out at this time. The use of PPE is actually burdensome for nurses, but it must be used considering the risk of contracting Covid-19 still exists. Working hours affect work fatigue due to an irregular lifestyle for nurses who use additional working hours. It would be very different for a nurse who works according to her working hours. She looks fresh. because most nurses who work without additional working hours will have a good resting pattern compared to nurses who get additional working hours. Basically, it will also affect the workload of the nurse. The addition of working hours carried out by hospital management makes nurses have to be smart in adapting in terms of working hours and times. The addition of working hours that occurs allows a difference in the length of work time so that it will directly affect the level of work fatigue of the nurse. Setyawati [3] states that existing work shifts affect work fatigue due to a lack of rest time for sleep for workers who work night shifts. It is also confirmed that work shifts and work fatigue are basically unidirectional.

Based on the results of the study, it can be seen that tenure has no relationship to work fatigue ( $p = 0.781$ ). Physically, individuals who have a long work period tend to have different physical and mental states from individuals who are new to their work, so that it has an impact on decreased performance which impacts on body endurance while working. Workers with longer working tenure usually experience a higher level of comfort in working when compared to new workers. This also results from the influence given by the existence of a service period that is positive or negative. A positive effect occurs when workers who have worked for a long time have increased experience with increasing working time. A negative effect occurs on workers who have long working periods due to

fatigue that occurs due to monotonous work every day so that workers feel that the activities they do are the same and repetitive, causing boredom from these workers.

There is a relationship between demographic characteristics and work fatigue experienced by nurses during the Covid-19 pandemic. The level of work fatigue experienced by many male nurses although the difference with female nurses is not too significant. This is due to the high activity when they come to work so that nurses get tired more easily. Nurses who get additional working hours tend to get tired more easily because of their reduced rest hours. Not to mention if there are problems from home, whether it's being a husband or wife when at home there are problems, it will reduce their rest hours, besides that if there are interpersonal conflicts it may also be experienced for nurses who get additional working hours. In other words, nurses who get additional service hours must be good at managing time, both at home and at work. so that the effect on the professionalism of nurses is less than optimal.

## V. CONCLUSIONS AND SUGGESTIONS

Based on the research results, it can be seen that there are differences or additional working hours for nurses before and after the Covid-19 pandemic. The results also showed that there was a relationship between age and working hours on the work fatigue experienced by nurses. It is better if hospital management can manage work and rest times as best as possible so that nurses can stay optimal when working.

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