

RELATIONSHIP OF AGE , GENDER , LENGTH OF WORK AND APPLICATION OF OHS MANAGEMENT SYSTEM DURING THE COVID-19 PANDEMIC TO STRESS EVENTS IN HEALTH WORKERS AT KAYU AGUNG HOSPITAL

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ABSTRACT

Health workers are at the forefront of responding to the COVID-19 emergency, which is at higher risk from various groups of workers. During the COVID-19 pandemic, workers may experience increased stress stemming from uncertain work situations, as well as increased stress for emergency response workers due to the application of strict K3 measures in preventing transmission, for example by using heavy PPE, applying physical isolation and etc. The purpose of this study was to determine the relationship between age, gender and length of work of health workers on stress with the application of an OHS management system during the COVID-19 pandemic. The type of research is analytic observational with cross sectional design. The study was conducted at the Kayu Agung Hospital in December 2020. The population of this study were health workers at the Kayu Agung Hospital. The sample of this research is health workers, namely doctors and nurses with a total sample of 97 respondents. The independent variables are age, gender, length of work, implementation of the OHS management system and the dependent variable is the incidence of stress. The data collection instrument used a questionnaire. Analysis of research data is univariate and bivariate using the chi square test. The results showed that there was no significant relationship ($p > 0.05$) between age, gender, length of work on the incidence of stress during the COVID-19 pandemic and there was a significant relationship ($p < 0.05$) between the implementation of the OHS management system and the incidence of stress, Odd value The ratio (OR) of 3.265 means that respondents who implement the OHS management system well are at risk of 3,265 times experiencing stress events compared to respondents who implement the OHS management system satisfactorily. The conclusion of this study is that only the application of the OHS management system has a significant relationship with the incidence of stress. It is hoped that it will increase the socialization of K3 and the application of the OHS management system, as well as manage stress with positive thinking patterns and apply a healthy lifestyle.

Keyword: OHS management system implementation, Stress events, Covid-19 pandemic

1. INTRODUCTION

The hospital is one of the places to provide health services to the community, especially for people who are sick. Health services provided to everyone are health efforts and are carried out by health workers in health facilities. Hospital workers have a higher risk than other industrial workers for the occurrence of Occupational Diseases (PAK) and Occupational Accidents (KAK)¹. Law No 36 of 2009 concerning health, article 165, states that workplace managers are obliged to carry out all forms of health efforts through prevention, improvement, treatment and recovery efforts for workers. In human life stress is a common problem that often occurs where stress is the body's response to something. Job stress is a combination of several factors such as work as an external

factor and worker characteristics as internal factors². A person's ability to deal with his environment can be threatened if the stress experienced is very heavy. The impact of stress on workers includes: physical illness caused by stress, work accidents, abuse of addictive substances, absent employees, loss of work motivation, to mental disorders that cause disruption of activities in daily². According to the results of the International Labor Organization (ILO) (2016) survey conducted from various countries in Europe, the United States and Australia, it was found that 2/3 of workers had experienced work stress. A survey conducted in Japan showed that more than 32% of workers experienced severe anxiety and stress as a result of their working conditions, while in Korea, 20% of workers reported work pressure and a heavy workload at work³. In

Indonesia, the results of a survey by Perinelli and Beker (2011) also show that work stress is a phenomenon that occurs in Indonesia. A survey conducted to 1500 workers in Indonesia showed that 80.39% of respondents felt that their current job made them feel stressed, 78.84% of respondents said that their work made them feel physically exhausted and 73.12% of respondents said that their work made them feel tired, mentally tired⁴. In 2014, according to a statement from the Central Statistics Agency, the number of adults in Indonesia who experienced mental health disorders in the form of work stress or mental emotional disorders was around 11.6-17.4% of 150 million population⁵. Corona virus disease 2019 (COVID-19) is an infectious disease that causes respiratory infections in humans caused by a newly discovered corona virus with mild flu-like symptoms to severe illness namely MERS and SARS⁶. Given the mode of transmission of COVID-19, workers are also at risk of transmission when interacting with someone who has the potential to transmit the virus. In carrying out risk control and prevention measures in various problems such as epidemics or severe pandemics, procedures in the OSH management system must be clear regarding response plans and emergency preparedness⁷.

Workplaces in various fields of work each agency has a risk of health and safety hazards to the workforce, in reducing the risk of harm, each agency can implement K3 management which is one of the requirements of the activities section in an agency in order to achieve productivity and efficiency in the workplace. As Law No.36/2009 concerning Health, that the workplace is obliged to carry out occupational health efforts if the workplace has a risk of health hazards and or has at least 10 people⁸. Health workers who work as the front line in carrying out the COVID-19 emergency response are at higher risk than various groups of workers. According to reports from Italy and China, from the number of confirmed positive, there are about 20% of health workers (The Lancet, 2020). In dealing with this new situation, experiencing distress and anxiety is a normal reaction experienced by every individual. In addition to the threat of viruses, quarantines carried out in various countries have negative psychological effects experienced by individuals, thereby increasing symptoms of stress⁹. During the COVID-19 pandemic, workers may experience increased stress

stemming from uncertain work situations, as well as increased stress for emergency response workers as a result of implementing strict K3 steps in preventing transmission, for example by using heavy PPE, applying physical isolation and others¹⁰. As the forefront of medical personnel such as doctors, nurses and hospital staff, it is easy to experience psychological disorders because they are pressured to face uncertain and risky situations¹¹. According to the results of research by Zhu, et al (2020) involving 5062 respondents in China, it was found that 1509 respondents experienced stress consisting of 243 doctors, 1130 nurses and 136 medical technicians. The results of research in Turkey by Elbay et al (2020) on 442 health workers were obtained 182 health workers experienced stress (42%) due to psychiatric disorders they had experienced and high working hours patterns. Meanwhile, according to the results of research by Rehman et al (2020) involving 34 psychiatric experts, 33 doctors and nurses in India, 33 participants (97%) experienced stress, namely 33 doctors and nurses with mild stress¹². Rosyanti and Indriono (2020) in their research also stated that the use of PPE is a source of stress for health care workers. In addition, there has been an increase in the workload due to sick or quarantined workers and a reduction in work staff by the agency¹³. So that during the pandemic, many workers are asked to work on a continuous schedule and longer than usual working hours¹⁴. This can create fatigue and stress in workers which interferes with the mental health of workers and can then increase the risk of injury and work accidents so that it has an impact on work-life balance³.

2. METHOD

The type of research is analytic observational with cross sectional design. The study was conducted at the Kayu Agung Hospital in December 2020. The population of this study were health workers at the Kayu Agung Hospital. The sample of this research is health workers, namely doctors and nurses with a total sample of 97 respondents. The independent variables are age, gender, length of work and the dependent variable is stress with the OHS management system. Instruments inata collection using a questionnaire. Analysis of

research data is univariate and bivariate using the chi square test.

3. RESULT

Frequency distribution by age

The distribution of the age frequency of health workers in this study from 97 subjects was dominated by the age group 36-45 years as many as 53 subjects (54.6%).

Table. 1 Frequency distribution by age

Age	n	%
< 25 year	4	4.1
25-35 year	35	36.1
36-45 year	53	54.6
> 45 year	5	5.2
Total	97	100.0

Frequency distribution by Gender

Frequency distribution based on gender of 97 subjects was dominated by female gender, namely 83 subjects (85.6%).

Table. 2 Frequency distribution by Gender

Gender	n	%
Male	14	14.4
Female	83	85.6
Total	97	100.0

Frequency distribution Based on Length of Service

Frequency distribution of the length of work of health workers from 97 subjects, 74 subjects worked 8-12 hours per day (76.3%), 22 subjects worked < 8 hours per day (22.7%) and only 1 subject worked > 12 hours per day (1%).

Table. 3 Frequency distribution Based on Length of Service

Length of service	n	%
< 8 hours	22	22.7
8-12 hours	74	76.3
> 12 hours	1	1.0
Total	97	100

Frequency distribution Based on OHS Management System Implementation

The frequency distribution of the application of the OHS Management System (SMK3) for health workers from 97 subjects, 53 subjects (54.6%) implemented SMK3 well, while the

remaining 44 (45.4%) implemented SMK 3 satisfactorily.

Table. 4 Frequency distribution Based on OHS Management System Implementation

OHS Management System Implementation	(n)	(%)
Good	53	54.6
Satisfying	44	45.4
Total	97	100

Distribution of the frequency of Incidence of Stress

The distribution of the stress frequency of health workers from 97 subjects, the majority of respondents did not experience stress as many as 51 respondents (52.6%), while respondents who experienced stress only 46 respondents (47.4%)

Table. 5 Distribution of the frequency of Incidence of Stress

Incidence Stress	(n)	(%)
Yes	46	47.4
No	51	52.6
Total	97	100

Relationship of Age to Incidence of Stress in Health Workers

Table 6. shows the relationship of age to the incidence of stress during the COVID-19 pandemic with the chi-square test obtained p value = 0.056 so it can be concluded that there is no statistically significant relationship ($p > 0.05$) between age and the incidence of stress in health workers.

Table 6. Relationship of Age to Incidence of Stress in Health Workers

Age	Incidence of Stress		<i>p value</i>
	Yes n (%)	No n (%)	
< 25 year	3 (6.5)	1 (2.0)	0.056
25-35 year	11 (23.9)	24 (47.1)	
36-45 year	28 (60.9)	25 (49.0)	
> 45 year	4 (8.7)	1 (2.0)	
Total	46 (100)	51 (100)	

The Relationship of Gender to the Incidence of Stress in Health Workers

Table 7. shows the relationship between the sex of health workers and the incidence of stress during the COVID-19 pandemic with the chi-square test, p value = 0.343, so it can be concluded that there is no statistically significant relationship ($p > 0.05$) between the sex of health workers and stressful events.

Table 7. The Relationship of Gender to the Incidence of Stress in Health Workers

Gender	Incidence of Stress		p value
	Yes n (%)	No n (%)	
Male	5 (10.9)	9 (17.6)	0.343
Female	41 (89.1)	42 (82.4)	
Total	46 (100)	52 (100)	

The Relationship of Length of Work to Stress Events in Health Workers

Table 8. shows the relationship between the length of work of health workers on the incidence of stress during the COVID-19 pandemic with the chi-square test, the p value = 0.213 so that it can be concluded that there is no statistically significant relationship ($p > 0.05$) between the length of work of health workers and the incidence of stress.

Table 8. The Relationship of Length of Work to Stress Events in Health Workers

Length of Work	Incidence of Stress		p value	OR
	Yes n (%)	No n (%)		
< 8 hours	13 (28.3)	9 (17.6)	0.213	1.838
8-12 hours	32 (23.9)	42 (82.4)		
> 12 hours	1 (2.2)	0 (0.0)		
Total	46 (100)	53 (100)		

The Relationship between the Implementation of the OHS Management System During the COVID-19 Pandemic to Stress Events in Health Workers

Table 9. shows the relationship between the implementation of the OSH management system during the COVID-19 pandemic and the incidence of stress in health workers. With the chi-square test, the p value = 0.005, so it can be concluded that there is a statistically significant relationship ($p < 0.05$) between the system implementation. K3 management with stressful events. The Odd Ratio (OR) value is 3.265 and is significant at a 95% confidence interval,

meaning that respondents who implement the OHS management system well have a tendency of 3,265 or 3 times higher to experience stress events compared to respondents who performs the implementation of the OHS management system satisfactorily.

Table 9. The Relationship between the Implementation of the OHS Management System During the COVID-19 Pandemic to Stress Events in Health Workers

OHS management system implementation	Incidence of Stress		p value	OR
	Yes n (%)	No n (%)		
Good	32 (69.6)	21 (41.2)	0.005	3.265
Satisfying	14 (30.4)	30 (58.8)		
Total	46 (100)	51 (100)		

4. DISCUSSION

The Relationship of Age to the Incidence of Stress in Health Workers During the COVID-19 Pandemic

In this study, the p value = 0.056, so it can be concluded that there is no statistically significant relationship ($p > 0.05$) between age and the incidence of stress in health workers. The older a person tends to be, the more susceptible they are to stress. Increasing age is followed by a decrease in physiological abilities, such as visual abilities, thinking, remembering and hearing¹⁵. Age is closely related to excessive responses and causes feelings of restlessness, unable to concentrate on carrying out medical actions, especially during the COVID-19 pandemic. In health workers who enter the adult stage, the way of thinking and responding to problems in the work section is generally more mature, and more and more required to be wiser according to health service procedures (Hartanti et al, 2016). In addition, young health workers (<25 years) tend to be less stressed because most of them do not have other problems. Most of the health workers aged 25-35 years already have families and have internal problems outside the work environment, so at this age they tend to have moderate stress levels. Health workers aged > 35 years generally already have experience in decision making, so that tend to be calmer in responding to stressors such as the COVID-19 pandemic¹⁶. The results of this study are in line with research by Musu

et al (2021) concluding that the COVID-19 pandemic is a negative event and situation which is a stressor of tension at all ages, so that a person is very susceptible to stress regardless of age¹⁵.

The Relationship of Gender to the Incidence of Stress in Health Workers During the COVID-19 Pandemic

In this study, the p value = 0.343, so it can be concluded that there is no statistically significant relationship ($p > 0.05$) between the sex of health workers and the incidence of stress. Research by Bella et al., stated that the majority of health workers were women, as many as 62.2%. The multivariate analysis in this study also stated that female sex was more susceptible to Covid-19 infection so this could affect women's psychology. Gender was associated with a higher risk of infection, but it was not statistically significant¹⁷. Several studies reported that men were more likely to be anxious (Handayani et al., 2020). The 2016 Indian National Mental Survey reported that women were more likely to be anxious than men¹⁸.

Long Working Relationships on Stress Events in Health Workers During the COVID-19 Pandemic

In this study, the p value = 0.213, so it can be concluded that there is no statistically significant relationship ($p > 0.05$) between the length of work of health workers and the incidence of stress. Research by Zerbini et al (2020) shows that health workers with higher workloads and longer working hours are more likely to suffer from anxiety and mental health disorders. Similar to Zerbini et al, Efriana et al (2020) conclude that work stress on health workers is caused by working hours that exceed the usual duration, without being accompanied by certainty when the COVID-19 pandemic will end given the recent spike in cases¹⁹. It is important to believe that everyone reacts differently to stressors in an emergency situation. Some levels of stress can help a person to keep working well (IDI, 2020). The experience of stress is very individual, as well as signs and symptoms of stress will be different for each individual²⁰.

Several studies have stated that the 12-hour shift pattern can have an adverse impact on health workers^{21,22}, working for 12 hours in one shift is not recommended because it can lead to

fatigue. and stress²³. The standard of productive working time for health workers is 80% of the total working hours in each shift, in other words the required rest time is 20%²⁴. During the COVID-19 pandemic, health workers need sufficient rest time to maintain the quality of their health, and reduce the risk of contracting^{25,26}. The results of the review show that the use of a 4-8 hour shift pattern in the morning, afternoon / evening and night with the division of time periods in each shift²⁷, can provide convenience for health workers in meeting biological and rest needs. High workloads and long working hours can trigger psychological disorders in health workers⁹.

The Relationship of the Implementation of the OHS Management System to the Incidence of Stress in Health Workers During the COVID-19 Pandemic

In this study, obtained p value = 0.005 so that it can be concluded that there is a statistically significant relationship ($p < 0.05$) between the implementation of the OHS management system and the incidence of stress. The Odd Ratio (OR) value is 3.265 and is significant at the 95% confidence interval, meaning that respondents who implement the OHS management system well have a tendency to 3,265 or 3 times higher to experience stressful events compared to respondents who satisfactorily implemented the OHS management system. This is in accordance with the research of Kuncoro et al., that there is an insignificant relationship between the application of the OHS management system and work stress with the Pearson product moment correlation ($p = 0.117$; $R = -0.193$) which is strengthened by the results of the t test which shows that there is a difference. significant work stress in the two research locations ($p = 0.838$; $t = -0.205$)²⁸. The correlation between the implementation of the OHS management system at the Anutapura General Hospital Palu ($R = 0.011$; $p = 0.011$)²⁹.

According to OSHA, individuals will feel stress when there is an imbalance between demand and the resources they have. In general, stressful conditions are psychological disorders but can also have an impact on individual physiology. Factors that can cause work stress include lack of control over work, unsuitable demands for workers, and lack of support from coworkers and management³⁰. During outbreaks such as COVID-19, emergency response

workers can face increased stress levels as a result of OSH measures and procedures strict measures to prevent transmission, for example physical burden with heavy PPE, physical isolation and so on¹⁰.

Stress does not always have a bad impact on workers in life. Stress is categorized into 2 groups, namely eustress which has a meaning as a positive force while distress which is destructive. Stress is also needed to produce high achievement and productivity. The higher the drive to have achievement, the higher the productivity and efficiency. Stress can develop into physical or mental illness so that you can't work properly³¹.

5. CONCLUSION

1. There is no significant relationship ($p > 0.05$) between the age of health workers and the incidence of stress during the COVID-19 pandemic at the Kayu Agung Hospital.
2. There was no significant relationship ($p > 0.05$) between the sex of health workers and the incidence of stress during the COVID-19 pandemic at the Kayu Agung Hospital.
3. There is no significant relationship ($p > 0.05$) between the length of work of health workers and the incidence of stress during the COVID-19 pandemic at the Kayu Agung Hospital.
4. There is a significant relationship ($p < 0.05$) between the application of the OHS management system to the incidence of stress during the COVID-19 pandemic at the Kayu Agung Hospital. The Odd Ratio (OR) value is 3.265 and is significant at a 95% confidence interval.

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