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Analysis of Nurse Work Stress Factors During the COVID-19 Pandemic

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Abstract

Based on the preliminary study at Prof dr. Soekandar Hospital, it was found that out of 30 nurses, 50% of them found it often difficult to relax and feel tired often. In addition, the results show that 76.90% of them feel very drained of energy. This study aimed to determine the relationship between personal and organizational factors and the occurrence of work stress for nurses during the COVID-19 pandemic at Prof. dr. Soekandar Hospital. This research was a quantitative observational study using a cross-sectional study design. The number of samples in this study amounted to 145 respondents using a purposive sampling technique. Data analysis used the Pearson test and linear regression. The events of work stress for nurses were unaffected by work shifts. The variables that affect the incidence of work stress are social support, workload, work shift, and the policies on the use of PPE. Based on the results of the multivariate test, 41.2% of nurses' work stress was influenced by social support, workload, work shifts, and policies on the use of PPE. Variables that simultaneously affect the incidence of work stress for nurses are workload and nurses' work shifts.

Introduction

Health workers are responsible for a vital role in improving the quality of health services to the community (Hartzler et al., 2018). According to a policy analysis of the health worker labor market, both hospitals and health centers require additional nursing staff. Tthe country will need an additional 1,500 doctors and 2,500 nurses to manage the surge of COVID-19 patients (Mahendradhata et al., 2021). Nurses are the spearhead of hospital health services, where nurses will carry out nursing care in outpatient, inpatient, and emergency services (Asjanti et al., 2021). The role of a nurse is significant for a health service because nurses are health workers who interact with patients the longest. For this reason, various hospital efforts are needed to maintain a nurse's performance (Washilah et al., 2021).

RSUD Prof. dr. Soekandar Mojokerto Regency is a type B hospital in East Java that offers comprehensive health services. Prof. dr. Soekandar Hospital, Mojokerto Regency, is one of the COVID-19 referral hospitals in East Java. Based on data from the Mojokerto District Health Office, Prof. dr. Soekandar hospital has the highest Bed Occupancy Rate (BOR) for COVID-19 Isolation in 2021 in Mojokerto Regency, where this value reaches 98%. Based on the data, 257 employees were exposed to COVID-19 over three years, with 5 dying and 252 declared cured. Where from the existing data, 60% of those who died from COVID-19 were the nursing staff.

Government policies related to sudden and special restrictions on COVID-19 may cause unwanted situations. This condition can harm the emotional, cognitive, and behavioral levels (Hermahayu et al., 2022). Psychological exposure to the Covid-19 outbreak differs from individual traumatic events in terms of the temporal nature of the exposure, where the Covid-19 outbreak has been an ongoing exposure for every member of society (Endika

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& Azam, 2021). Various research results also state that health workers who handle COVID-19 in hospitals show that 97.57% of nurses experienced work stress during the peak of the Coronavirus outbreak. More than half (59.76%) of (98) nurses experienced moderate levels of work stress (Jeyapaul et al., 2021). 64.6% of nurses at Pelamonia Makassar Hospital also experienced work stress during the COVID-19 pandemic (Salcha & Juliani, 2021). In carrying out their work, nurses not only deal with patients but also with patients' families, patient friends, coworkers with fellow nurses, relate to doctors and regulations in the workplace and workload which is sometimes considered to be incompatible with their physical, psychological and emotional conditions (Sarafis et al., 2016). This high workload increases work stress for health workers (Maziyya et al., 2021). Nurses' work stress often occurs even before the COVID-19 pandemic. It can be shown in the research of Sulistyawati et al. (2019), stating 87.1% of nurses experienced moderate work stress, with the majority of respondents with a working period of 6 months to 3 years experiencing moderate work stress (Sulistyawati et al., 2019). This research is also per Hardiansyah et al., (2019) stating 56.63% are at a high-stress level (Hadiansyah et al., 2019).

In providing health services to the community, Prof dr. Soekandar Hospital, Mojokerto Regency, was assisted by 222 nurses at the hospital. Based on the preliminary study conducted by the researcher by distributing questionnaires to nurses at RSUD Prof. dr. Soekandar, it was found that out of 30 nurses, 50% of them found it often difficult to relax. It also impacts 50% of the nurses who feel tired often. In addition, the results show that out of 30 nurses, in carrying out their work 76.90% feel very drained of energy. Based on a preliminary study conducted in the Human Resource Management section of Prof dr. Soekandar Hospital, Mojokerto Regency, it is known that so far, the Human Resource Management of Prof dr. Soekandar Hospital, Mojokerto Regency, has never analyzed the stress levels of health workers, especially nursing staff. It is undoubtedly contrary to mental health guidelines issued by the World Health Organization (WHO), the Indonesian Ministry of Health, and the Indonesian Doctors Association. (World Health Organization (WHO), 2014). In supporting the efforts issued by WHO, the Indonesian Ministry of Health, and PB IDI, this study focuses on analyzing the factors of work stress for nurses at Prof dr. Soekandar Hospital, Mojokerto Regency, guided by Robbins and Judge's theory which says that personal and organizational factors can cause the causes of work stress.

Method

This research was a quantitative study with a cross-sectional approach. This study's population consisted of all 222 nurses at Prof. dr. Soekandar Hospital. Calculation of the sample size in this study used the Slovin formula with a confidence level of 5%, so the total sample was 145 nurse respondents with the inclusion criteria of nurses who have worked since or before the COVID-19 pandemic. Nurses who were conducting training and nurses who were on leave at the time the research was conducted were the exclusion criteria in this study. Data collection took time in October-December 2022 at Prof. dr. Soekandar Hospital.

The dependent variable in this study was the work stress of nurses at Prof dr. Soekandar, Mojokerto Regency. The independent variables in this study were sources of work stress, including personal and organizational factors, where personal factors include years of service, and social support, while organizational factors include workload, work shifts, and policies on Personal Protective Equipment (PPE). Data collection was carried out by direct interviews with respondents using a questionnaire that has been tested for validity and reliability. The stages of data analysis include editing, coding, processing, cleaning, and tabulating. The analysis used in this study included univariate analysis, bivariate analysis using the Pearson test, and multivariate analysis using multiple linear regression at a significance level of $p<0.05$. Processing of research data using the help of SPSS software. The analyzed data is presented in the form of narrative tables. This research has received ethical approval from the KEPK of the Faculty of Public Health, Diponegoro University, with No: 366/EA/KEPK-FKM/2022.

Results and Discussions

The total sample of the study was 145 nurses. The characteristics of the respondents are in Table 1, where 4.8% of male respondents experienced heavy work stress, and 14.5% of female respondents experienced heavy work stress. 15.2% of respondents with married marital status experienced heavy work stress. Age average age of the respondents was 34.1 ± 7.5 years, with the majority educational level of 44.1% being in the Nursing Profession. 60% of respondents said that they had never confirmed positive for COVID-19. The majority of heavy work stress occurs at the age of ≤34, with a percentage of 12.4%. The majority of educational levels experiencing heavy work stress are at the D1/D3 education level. In addition, 12.4% of nurses who confirmed positive for COVID-19 experienced heavy work stress.

Tabel 1. Frequency Distribution of Respondents based on Demographic Characteristics and Work Stress Distribution based on Demographic Characteristics

Characteristics of Respondents	Mean ± SD	Number of Respondents		Work Stress					
				low		Moderrate		Heavy	
		f	%	f	%	f	%	f	%
Gender				9	6,2	27	18,6	7	4,8
Male		43	29,7	23	15,9	58	40	21	14,5
Female		102	70,3						
Marital Status									
Yes		119	82,1	27	18,6	70	48,3	22	15,2
No		26	17,9	5	3,4	15	10,3	6	4,1
Age	34,1 ± 7,5								
a. ≤34		76	52,4	17	11,7	41	28,3	18	12,4
b. >34		69	47,6	15	10,3	44	30,3	10	6,9
Education Level									
a. D3		63	43,4	10	6,9	38	26,2	15	10,3
b. D4/S1		18	12,4	3	2,1	10	6,9	5	3,4
c. Profesi Ners		64	44,1	19	13,1	37	25,5	8	5,5
Positive Confirmation of COVID-19									
a. Yes		58	40	10	6,9	38	26,2	10	6,9
b. No		87	60	22	15,2	47	32,4	18	12,4

Source: Primary Data, 2022

Table 2. Frequency Distribution of Respondents Based on Independent Variables and Bivariate and Multivariate Analysis Results

Characteristics of Respondents	Work Stress						Bivariate Analysis		Multivariate Analysis		
	Low		Moderate		Heavy		*P Value*	*R*	*Regression Coefficient*	*P Value*	*Coefficient Determination*
Period of Work											
≤9 years	19	13,1	40	27,6	18	12,4	0,375	-0,074	Not continued		
>9 years	13	9	45	31	10	6,9					
Social Support											
Low	9	6,2	52	35,9	26	17,9	0,001	-0,277	-0,044	0,895	
High	23	15,9	33	22,8	2	1,4					
Workload											
Low	28	19,3	45	31,0	13	9,0	0,000	0,562	0,913	0,000	
Heavy	4	2,8	40	27,6	15	10,3					0,412
Work Shift											
Bad	23	15,9	50	34,5	23	15,9	0,000	-0,418	-2,173	0,000	
Good	9	6,2	35	24,1	5	3,4					
The PPE Use Policy											
Bad	13	9,0	63	43,4	24	16,6	0,000	-0,326	-0941	0,174	
Good	19	13,1	22	15,2	4	2,8					

Source: Primary Data, 2022

The results of the univariate analysis in Table 2 showed that Respondents with a working period of ≤9 years experienced heavy work stress of 12.4%. The respondents' low level of social support experienced heavy work stress of 17.9%. 10.3% of respondents with heavy workloads also experienced heavy levels of work stress. 15.9% of respondents said a poor shift work system also experienced heavy work stress levels. 16.6% of respondents said the poor personal protective equipment (PPE) policy system also experienced severe work stress.

The variable period of work (p = 0, 375) was also not related to the incidence of nurse work stress during the COVID-19 Pandemic at Prof. dr. Soekandar Hospital. Research by Hendy et al., (2020) said that the work period is not related to the incidence of nurse work stress during the COVID-19 Pandemic (Hendy et al., 2020). Nurses with a working period of more than 10 years show a lower average stress level because experienced nurses are more dedicated and more enthusiastic, so responsiveness at work is also high (Ali et al., 2022; Çemberci et al., 2022). It certainly impacts the relationship between the nurse's work period and the work stress that occurs.

The social support variable showed that there was a significant relationship between social support and the incidence of nurse work stress (P=0.001) with the correlation coefficient strength belonging to the category "Weak" (R= -0.277) and negative values, which means that the higher the level of social support, the lower the work stress experienced by nurses. This social support is an essential motivating factor or predictor factor for nurses during the COVID-19 Pandemic (Issa et al., 2022). Support from nurse managers, senior staff, and co-workers are also influencing how nurses cope with the challenges of the COVID-19 Pandemic (Son et al., 2022). It is per the statement of Cohen and Wills (1985), who said that the function of social support can help individuals be able to deal with and overcome the causes of work stress (Anggraini & Nanda, 2021). A nurse can adapt to the work stress she experiences with the help of the social support she receives. It shows that social support has a protective role in reducing the incidence of work stress to improve nurses' quality of life and job satisfaction (Karadaş & Duran, 2021).

The workload variable showed that there was a significant relationship between workload and the incidence of nurse work stress (P=0.000), with the correlation coefficient strength included in the category of "Strong Enough" (R= 0.562) and was positive, which means that the heavier the workload, the higher the work stress experienced by the nurse. Several studies support the relationship between workload and work stress experienced by nurses. Research by Ali et al. (2022), shows that more than 80% of respondents experience a high level of work stress due to the increased workload experienced by nurses (Ali et al., 2022). Alipurman & Sastrawan (2022), also said that 45.5% of nurses experience heavy workloads, which affects the occurrence of heavy work stress during the COVID-19 Pandemic. This study showed that heavy workloads would have a 5.5 times higher effect on nurses' work stress events (Alipurman & Sastrawan, 2022). It can be because during the COVID-19 Pandemic, nurses work intensively in high-risk areas so that it can reduce motivation and increase work stress experienced. This incident can certainly negatively affect the performance of nurses (Ardıç et al., 2022).

The work shift variable shows that there is a significant relationship between the work shift variable and the nurse's work stress incidence (P=0.000) with the correlation coefficient strength belonging to the category of "Strong Enough" (R= -0.418) and is negative, which means that the better the hospital work shift system, the lower the work stress experienced by the nurse. Several studies have shown a negative correlation between work shifts and the incidence of nurse work stress. The impact of an unfavorable shift work system's impact can affect nurses' physical and psychological health. Several studies have concluded that work shifts are the primary source of work stress that affects the human circadian system, resulting in psychosocial, psychological, and physiological problems. It shows that a high level of work stress will increase psychological pressure and reduce job satisfaction among nurses, affecting work performance and turnover (Dodia & Parashar, 2020). Nursing management should ensure better scheduling of shift work to have

an impact on improving nurse performance and personal health status so that it will enhance the quality of patient care as well (Lin et al., 2014).

The policy variable for the use of Personal Protective Equipment (PPE) showed that there was a significant relationship between the Personal Protective Equipment (PPE) Use Policy and the incidence of nurse work stress (P=0.000) with the correlation coefficient strength belonging to the "Weak" category (R= -0.326) and negative values which means that the better the Personal Protective Equipment (PPE) Use Policy system, the lower the work stress experienced by nurses. The negative relationship direction value means to be a negative predictor of the incidence of nurse work stress. It is in line with the research of Hendy et al., (2020), which emphasizes that the better the supply of Personal Protective Equipment (PPE), the lower the incidence of nurses' work stress during the COVID-19 Pandemic (Hendy et al., 2020). The availability of Personal Protective Equipment will eliminate nurses' fear of providing nursing care to all types of patients, whether covid-19 suspect patients or not. It will certainly have an impact on the pressure of nurses at work so that it becomes a supporting factor for nurses' work stress (Ahorsu et al., 2022).

Table 2 shows that the strength of the direction of the relationship between variables also affected the relationship of variables simultaneously. Simultaneously, the variables affecting the incidence of work stress during the COVID-19 Pandemic at Prof. dr. Soekandar Hospital was a workload variable (P=0.000; Regression Coefficient =0.913). The value showed that if the nurse's workload increased by 1%, then the work stress value also increased by 0.913, assuming other variables were considered constant. Work shift variable (P=0.000; Regression Coefficient =-2,173) also affected the incidence of nurse work stress during the COVID-19 Pandemic at RSUD Prof. dr. Soekandar. The value showed that if the nurse's work shifts system better by 1% and the work stress value also decreased by 2,173, assuming other variables were considered constant. In Table 2, the value of the coefficient of determination or R Square was 0.412 or equal to 41.2%. This figure shows that 41.2% of the incidence of nurse work stress at Prof. dr. Soekandar Hospital was influenced by the variables Social Support, Workload and Work Shifts, and Personal Protective Equipment (PPE) Use Policy. Meanwhile, 58.8% were affected by variables that were not studied.

Heavy workload has a significant relationship with work stress, which can cause health problems for nurses, decreasing nurse caring behavior and reducing the quality of service (Rizkianti & Haryani, 2020). The influence of workload on work stress events can be seen from physical, psychological, and behavioral aspects. An increase in the number of nurses based on patient ratios, job description clarity, autonomy, and supervisor support can help nurses handle the workload they are experiencing (Adriani et al., 2022).

The work shift variable is also a significant variable simultaneously with the nurse's job stress variable. The division of work shifts that do not pay attention to the quality of rest from nurses can cause emotional and mental exhaustion, disruption of normal sleeping and waking hours, depression, and several diseases. In addition, patient health and safety will also decrease due to the impact obtained from a poor shift work system (Hoedl et al., 2021). Changes in work shift patterns that are lighter and shorter are needed to support health problems experienced by health workers (Iswanto, 2020). Changes in workload and work shift systems that do not support nurses' work will affect nurse performance. There are significant differences in the performance of nurses before and after the COVID-19 pandemic, where these results harmed nurse performance (Herwanto et al., 2021). The statement above shows that hospitals need special attention to follow up on workload and work shifts that apply in hospitals.

Conclusion

Personal factors that influenced the incidence of work stress for nurses during the COVID-19 Pandemic in Prof. dr. Soekandar Hospital were social support variables. Organizational factors that influence the incidence of work stress for nurses during the COVID-19 Pandemic in Mojokerto Regency are workload, work shifts, and policies on Personal Protective Equipment (PPE). More attention is needed

to improve the social support given to nurses in improving their job performance, both emotional support, instrumental support, appreciation support, and informational support. Routine analysis of workload is also needed, which includes analysis of workload in terms of physical aspects, psychological aspects, and working time for nurses so that it can be used as material for re-planning or HR mutation if needed. In addition, it is necessary to review the work shift system and policies on using Personal Protective Equipment (PPE) implemented in Prof. dr. Soekandar Hospital.

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