The Implementation of Nurses' Safety during the Covid-19 Pandemic based on Work Stress

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ABSTRACT

Nurses' safety is one of the prominent issues during the COVID-19 pandemic. The pandemic has also given psychological effects to nurses especially work stress. This research aimed to investigate the relationship between work stress and the implementation of nurses' safety. This was a descriptive correlational study with a cross-sectional approach. The samples were 134 nurses in a hospital in Magelang Regency who obtained by purposive sampling. The data were gathered through DASS 21 questionnaire and a questionnaire on nurses' safety practices during the COVID-19 pandemic. Then, the data were analyzed by the Spearman rank tests. The results indicated that there was a significant relationship between work stress and the implementation of nurses' safety (p= 0.000). Nurses who had normal work stress implemented nurses' safety properly.

Pelaksanaan Keselamatan Perawat Pada Masa Pendemi Covid-19 Berdasarkan Stres Kerja

ABSTRAK

Keselamatan perawat merupakan salah satu isu penting dalam masa pandemi Covid-19. Masa pandemi Covid-19 juga memberikan dampak psikologis pada perawat terutama stres kerja. Penelitian ini bertujuan mengetahui hubungan stres kerja dengan pelaksanaan keselamatan perawat. Desain penelitian yang digunakan adalah korelasi deskriptif dengan pendekatan cross sectional. Teknik pengambilan sampel menggunakan purposive sampling dengan jumlah sampel sebanyak 134 perawat di sebuah rumah sakit di Kabupaten Magelang. Pengambilan data menggunakan instrumen kuesioner Depression, Anxiety, and Stress Scale (DASS 21) dan kuesioner pelaksanaan keselamatan diri perawat pada masa pandemic Covid-19. Selanjutnya di analisis menggunaan uji rank spearman. Hasil penelitian menunjukkan ada hubungan bermakna antara stres kerja dengan pelaksanaan keselamatan perawat (p= 0,000). Perawat yang memiliki tingkat stres kerja normal ditemukan melaksanakan keselamatan perawat dengan baik.

INTRODUCTION

One of the foremost issues during the COVID-19 pandemic is health workers' safety (Pesulima & Hetharie, 2020). This is because safety is a major priority in providing health services. Quality service is not only seen from the completeness of equipment, infrastructure, and service but also providing safe service to patients and nurses (Permenkes RI, 2018).

The data of confirmed COVID-19 cases all over the world amounted to 101,561,219 patients. According toKPCPEN, there were 1,078,314 confirmed COVID-19 patients in

Indonesia per January 31st, 2021, and 2.8% (29.998) of them died (KPCPEN, 2021).

The number of health workers who were confirmed positive and died due to COVID-19 is relatively high. In the US, more than 150,000 health workers were infected by COVID-19 (Michaels & Wagner, 2020). Moreover, the number of deaths of Indonesian health workers continues to grow. As many as 647 health workers died due to COVID-19. The number is the highest in Asia and the third-largest in the world. From the aforementioned number, 221 of them were nurses (Pranita, 2020).

According to World Health Organization (2020) during the pandemic health workers have rights and obligations when providing patient care management. They are required to work and provide all services by still considering personal safety. Nurse is the only profession who provides full service to patients for 24 hours (Hoedl et al., 2020). There are approximately 20 nursing actions, delegations, and mandates which have the potential for biological, mechanical, ergonomic, and physical hazards (Ramdan & Rahman, 2018).

Some previous research stated that the implementation of nurses' safety was still poor. Research conducted by Gunawan & Chalidyanto (2020) revealed that during the COVID-19 pandemic only 43.40% of the health workers obediently wore personal protective equipment (PPE). The number was quite high considering that one of the COVID-19 preventions is by wearing PPE properly (Rohman et al., 2020). Nugroho & Widiyanto's (2020) research also figured out that at the beginning of the pandemic, many nurses did not comply with 5 moments of handwashing. Then, Wee et al (2020) showed that the compliance of handwashing, infection prevention, and preventive actions were relatively low. Prakash et al (2020) who researched in the operation rooms still found health workers who did not wear PPE due to inconveniences, poor visibility, and frequent fogging.

Based on the data above, the researchers found that during the pandemic many nurses had not yet implemented nurses' safety well. However, a specific study regarding the implementation of nurses' safety during the pandemic has not been conducted to date. Since the implementation of personal safety was not merely about PPE, the researchers intended to relate work stress because it was one of the biggest problems faced by nurses while working in the pandemic.

The research data also figured out the high level of stress experienced by nurses. COVID-19 pandemic had significantly resulted in burnout syndrome among nurses (Leskovic et al., 2020; Murat et al., 2021). Another research also found out that nurses who were working during the pandemic faced psychosocial risks including stress which might affect their psychological and physical health (Soto-Rubio et al., 2020). Moreover, nurses may experience high stress due to the COVID-19 pandemic. In their research, Hoedl et al (2020) showed that there was a relationship between the duration of wearing masks and nurses' stress during the pandemic. Work stress is one of the problems in health services, especially during the COVID-19 pandemic. This is because nurses had to experience high workloads and various psychosocial stressors that could affect their mental and emotional (Lancet, 2020; Sultana et al., 2020). Pandemic had caused significant psychological effects on nurses which needed to be prevented (Fernandez et al., 2020).

The preliminary survey was conducted in the research site. It was a non-educational type C hospital in Central Java and had been accredited *Paripurna*. The hospital was treating COVID-19 patients. One of its management development efforts was to focus on the development of human resources because it considered that highly competitive human resources could increase performance and patients' satisfaction significantly. Human resources development kept monitoring the standardization of safety practices for patients and nurses so that it could provide optimal, safe, and quality services during the pandemic like today.

Therefore, based on the data above, it is essential to conduct a study about the implementation of nurses' safety based on work stress, exclusively there are three prominent reasons. First, the implementation of nurses' safety had not yet been optimum. Second, nurses were experiencing a high level of stress. Third, hospital needed to implement nurses' safety so that it could provide quality service, safety, and comfort and based on accurate data and objective measurement. Thus, this research was conducted as an effort to improve the implementation of nurses' safety. In particular, this research aimed to analyze the relationship between work stress and nurses' safety in a hospital in Magelang regency.

METHOD

This research applied a descriptive-correlational design with a cross-sectional approach. The research was conducted in a hospital in Magelang regency, Central Java, in June 2021. There were 134 executive nurses as research samples who were obtained by purposive sampling and met the inclusion criteria including 1) willing to be a respondent 2) minimum education Diploma 3 of Nursing 3) have been working for at least 1 year. On the other hand, the exclusion criteria were 1) on leave and 2) sick.

The data were obtained by questionnaire on Depression, Anxiety, and Stress Scale (DASS 21) and dan questionnaire on nurses' personal safety during the COVID-19 pandemic. The questionnaire has been tested its validity and reliability in a hospital in Purworejo regency to 30 respondents. Product moment correlation tests indicated that r Count was greater than r table (0.3610), which meant the instrument was valid. While for the reliability, the Cronbach's Alpha tests indicated that the instrument value was greater than 0.70.

Questionnaire on DASS 21 consisted of 7 items related to work stress and used Likert scale: never (0), sometimes (1), often (2), and almost always (3), while personal safety practices questionnaire consisted of 13 items and used Likert scale: never (0), sometimes (2), often (3), and always (4). The data were then analyzed by the Spearman rank tests. This research has been approved by Research Ethics Committees number 081/EC/KEPK-S1/04/2021.

RESULTS AND DISCUSSION

The data about respondents' characteristics can be perceived in Table 1.

Based on Table 1, the average of respondents' age is 42.32 years. The average length of employment is 15.57 years. The majority of education (80.7%) is Diploma III of Nursing and most of the respondents (73.1%) are female.

Table 2 shows that 81.3% of the respondents are categorized in normal work stress and 79.1% of the respondents have good nurses' safety.

Table 3 shows that nurses with normal work stress tend to perform good nurses' safety practices (89.9%). On the

other hand, nurses with mild work stress tend to perform fair nurses' safety practices (68%). The results of Spearman's analysis indicated that there was a relationship between work stress and the implementation of nurses' safety (p=0.000, p<0.05).

Table 1
Respondents' Characteristics

Variables	Results
Age	
Mean	42.32
SD	7.51
Min-max	26-57
Length of Employment	
Mean	15.57
SD	8.97
Min-max	2-36
Education, $\sum$ (%)	
Diploma III of Nursing	80.7
Bachelor of Nursing	19.3
Gender, $\sum$ (%)	
Male	26.9
Female	73.1

Table 2
Work Stress and The Implementation of Nurses' Safety

Variables	Frequency	Percentage
Work Stress		
Normal	109	81.3
Mild	25	18.7
Moderate	0	0
High	0	0
Severe	0	0
The Implementation of Nurses' Safety		
Good	106	79.1
Fair	28	20.9
Poor	0	

Table 3
The Implementation of Nurses' Safety based on Work Stress

Work Stress Variables	The Implementation of Nurses' Safety						Total		P Value
	Poor		Fair		Good				
	n	%	n	%	n	%	n	%	
Normal	0	0	11	10.1	98	89.9	109	100	0.000
Mild	0	0	17	68	8	32	25	100	
Moderate	0	0	0	0	0	0	0	0	
High	0	0	0	0	0	0	0	0	
Severe	0	0	0	0	0	0	0	0	
Total	0	0	28	20.9	106	79.1	134	100	

The analysis results showed that most of the respondents (79.1%) had good nurses' safety practices. This result indicated that the respondents had complied with the prevailing regulations when implementing nurses' safety. The assessment of nurses' safety during the pandemic included taking care of general patients, patients with respiratory problems, suspected patients, and suspected/probable/confirmed COVID-19 patients. Furthermore, the assessment consisted of the implementation of early identification, hand washing, wearing head cap, surgical/N95 masks or equivalent, uniforms, gowns or aprons, latex gloves, face shields, and shoes cover, minimizing close contact with patients, and taking bath before going home (Satgas Covid-19, 2020).

Several factors affecting nurses' safety included age, length of employment, and educational level. The researchers assume that the respondents' age highly affect the implementation of nurses' safety. This is in line with research conducted by Salaka & Iqra (2021) which mentioned that age affected hand washing and the use of personal protective equipment (PPE). Nurses' age is one of the essential elements in decision making because it relates to the previous experience. A person's mindset is influenced by age so that as someone gets older, his ability in making decision related to work procedures will be increased (Andini, 2020). Thus, with a sufficient age, someone will be more mature in thinking or acting (Salaka & Iqra, 2021).

The average length of employment was 15.57 years, which meant the nurses had long duration of working. The previous research indicated that there was a relationship between length of employment and nurses' compliance on wearing PPE (Asmi, 2017). An experienced health worker will perform the job well and comply with the standards. Nurses who have sufficient experience will possibly behave accordingly (Andini, 2020). Based on the theories, the longer length of employment, the better nurses understand the condition of work environments so that they will comply with the prevailing regulations and maintain health and safety (Izza et al., 2021).

Another factor is educational level. Asmi (2017) stated that there was a relationship between education and nurses compliance, one of which was related to the use of PPE. High education will affect individual's mindset. The higher educational level, the easier someone accepts information given. Besides, nurses with higher educational level are assumed to have better knowledge and skills in doing their jobs (Andini, 2020).

In this research, nurses' safety practices had been carried out well and needed to be appreciated, while the previous research indicated that nurses' safety practices were relatively low. Chughtai et al (2016) revealed that the compliance level in the use of medical mask and cloth was very low and perceived by the nurses causing discomfort and various respiratory problems. Other research carried out by Kim & Lee (2016) and Prakash et al (2020) showed that the use of goggles hindered nurses in taking care of the patients and caused discomfort. On the other hand, health workers especially nurses need to apply safety practices according to

the standards to minimalize transmission. Several obstacles may arise during the implementation of nurses' safety which resulting in higher possibility of transmission. Health workers infected by COVID-19 could be caused by inadequate access to PPE, safety procedures, and diagnostic protocols (Delgado et al., 2020).

The data from previous research showed that COVID-19 had caused 63% of the health workers suffered from visual impairment, 54% communication disorder, 66% decreased comfort level, and 82% burnout (Benítez et al., 2020). Therefore, a proper action must be performed to increase nurses' health status in terms of nutrition, rest, quality of life, physical activities, and safety (Ross, 2020).

The analysis results found that most of the nurses experienced normal work stress level because the management had carried out stress control management properly. Controlling stress management is important to minimize the possible effects. Improper stress management results in the incidence of depression, anxiety, decreased work satisfaction, hampered individual relationships, and even increasing the risk of suicide (Salari et al., 2020). Therefore, recognizing stressors and conducting regular training could be an effective step to prevent, treat, and decrease stress (Wang et al., 2020; Zhang et al., 2020; Liu et al., 2020; Salari et al., 2020). Pandemic has caused significant psychological effects on nurses, that is why preventive actions is important to do (Fernandez et al., 2020).

Based on the analysis, this research concluded that there was a relationship between work stress and the implementation of nurses' safety. Stress came from various demands and pressure regarding procedures, an increase in work hours, and anxiety so that stress management needed to perform (Ross, 2020; Mo et al., 2020;Okechukwu et al., 2020). Interventions in the form of digital media like e-learning and video platforms are some alternative ways to handle various problems when taking care of patients. The media helped nurses to discuss communication skills, case handling skills, and problem-solving strategies related to possible psychological problems that might arise from treating COVID-19 patients (Okechukwu et al., 2020). Therefore, it is important to identify the onset and prevalence of work stress among hospital staffs during the COVID-10 pandemic so that protection for nurses can be given and the quality service to the patients can be achieved (Salari et al., 2020).

LIMITATION OF THE STUDY

The limitation of this study was that the research results cannot be generalized since work stress and the implementation of nurses' safety was only applied in the research site.

CONCLUSION AND SUGGESTIONS

In accordance with the research objectives, it can be concluded that there is a significant relationship between work stress and the implementation of nurses' safety in a hospital in Magelang Regency. The hospital needs to support the improvement of the implementation of nurses' safety through good work stress management. For this reason, it is very necessary to develop a work program related to stress management so that strategies for solving psychological problems that arise during the Covid-19 pandemic can be developed. The results of this study can be used as initial data for the development of further research on work stress and the implementation of nurse safety, so that in the end it can improve the implementation of patient safety for nurses in health services.

Conflict Of Interest Statement

The authors declare that there is no potential conflict of interest or finance associated with the authorship and publication of this article.

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