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Original Article

Coping Strategies and Dass Scores among Nurses on Duty in Covid-19 Isolation Room: A Cross-Sectional Study

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Abstract

Background : Nurses are at risk for mental health problems while caring for Corona Virus Disease 2019 (COVID-19) patients. The COVID-19 pandemic had impacted not only on emotions but also nurses' coping strategies. The difference between this study and previous research in this study adds up the total DASS 42 (Depression Anxiety Stress Scale) scores as parameter to assess mental health problems of the subjects. The objectives of this study was to determine the association between coping strategies and the DASS score among nurses on duty in the COVID-19 isolation room of Dr. Kariadi Hospital.

Methods : This cross-sectional study involved nurses who treated patients in the COVID-19 isolation ward, the COVID-19 intensive room, and the COVID-19 emergency room. All participants were involved by the consecutive sampling method. The research instrument used a sociodemographic questionnaire, the Brief COPE, and the DASS 42. Inclusion criteria included nurses who served in the COVID-19 isolation room and aged 22-60 years. Higher DASS score indicates that the subject is experiencing general psychological distress compared to subjects with a lower score.

Results : Most of the respondents in this study (n=112 subjects) had problem-focused coping strategies. The mean DASS score on the subjects is 14.29 ± 13.25. There was an association between coping strategies ($p=0.048$), sex ($p < 0.001$), place of work ($p = 0.041$), and DASS score.

Conclusion : There was a relationship between coping strategies and the DASS score of nurses on duty in the COVID-19-19 isolation room. Further research needs to explore environmental factors and social support, also examine physical illnesses in more detail.

Keywords : Coping strategies; DASS; nurses; COVID-19; mental health

INTRODUCTION

The coronavirus disease 2019 (COVID-19) was first detected in Wuhan, China. Based on the official website of World Health Organization (WHO), on February 13, 2021, there were around 410,876 new cases of patients infected with COVID-19 globally.[1] Based on data from the Ministry of Health of the Republic of Indonesia (Kemenkes RI), it is known that the total confirmed cases of COVID-19 globally as of February 11, 2021, there were 106,991,090 cases with 2,347,015 deaths and a Case Fatality Rate (CFR) of 2.2%.[2,3] One of the most needed case-control efforts is the preparation of facilities and infrastructure for the management of cases that require an isolation room that meets the requirements. Therefore, the Dr Kariadi Hospital was appointed as one of the COVID-19 referral hospitals in Central Java.[3]

Nurses are medical professionals involved in handling COVID-19 and are prone to mental health problems.[4] Nurses' occupational stress has been found to decrease the health and well-being of nurses and may put patient safety at risk and has been linked to patient errors. Stress management in health care worker, especially nurse, is needed to sustain and grow healthy and fiscally viable health care organizations that provide safe, high-quality care.[5] One of the studies by Lai *et al* found that nurses who are directly involved in the care of COVID-19 patients are at higher risk of developing mental health problems, such as depression and anxiety disorder.[6] One instrument that can be used to assess mental health problems is the DASS 42 (Depression Anxiety Stress Scale).[7]

Study on depression, anxiety, and stress among nurses during COVID-19 lockdown has been conducted in Nepal which shown some degree of depression, anxiety and stress were prevalent among nurses during the COVID-19 pandemic.[8] Another cross-sectional study in 8 European countries during peak COVID-19 months had a considerable proportion of the participants, which is medical professionals, showed high values for depression, anxiety, and stress.[9] A similar study was also conducted at the COVID-19 Referral Hospital in Aceh, Indonesia which focused on mental distress among nurses in regular ward and COVID-19 ward.[10] However, these two studies used DASS-21 which is the shortened version of DASS-42.

COVID-19 not only has an impact on emotions but also changes coping strategies. The use of good coping strategies will help individuals manage stress and reduce negative emotions, but the association between nurses' coping strategies and emotional responses due to infectious diseases such as COVID-19 still requires further research.[11] We would like to investigate not only mental health problem, but also coping strategies among nurse in the setting of COVID-19 pandemic. This study was to determine the association between coping strategies and the DASS score among nurses on duty in the COVID-19 isolation room of Dr. Kariadi Hospital.

MATERIALS AND METHODS

This research is a quantitative study with a cross-sectional approach at Dr. Kariadi Hospital. Data collection was carried out in July 2021. Inclusion criteria included: nurses who served in the COVID-19 isolation room and aged 22–60 years. Exclusion criteria included: history of having or being treated by a psychiatrist and starting to suffer from mental problems with or without taking medication from a psychiatrist since before the COVID-19 pandemic; and use alcohol, narcotics, and psychotropic substances.

Using a consecutive sampling technique, 168 subjects were obtained as respondents. Each respondent filled out the informed consent, sociodemographic questionnaire, COPE Brief questionnaire, and DASS 42 questionnaire. The DASS scores, age, gender, education, workplace, job position, medical condition, and coping strategies were obtained using a questionnaire. Coping strategy as measured by COPE Brief is obtained by adding up each question. The coping strategy's dimensions consists of problem-focused, emotional focused, and dysfunctional coping which then categories to 14 coping stategies. This questionnaire is a self-rating consisting of 28 questions, using a Likert scale where the answer choices are always (SL) = score 4, often (SR) = score 3, sometimes (KK) = score 2, never (TP) = score 1.12 The DASS questionnaire consists of 42 items to measure three scales, namely depression, anxiety and stress each of which has 14 statement items. The answer to this DASS test consists of 4 choices arranged on a scale, namely 0 = never, 1 = sometimes, 2 = often, 3 = very often. The value obtained from the subjects' response was totalled.[7]

Data were analyzed by univariate and bivariate using the SPSS program. Univariate analysis to determine descriptive data and description of sociodemographic characteristics such as mean value, standard deviation, maximum value, minimum value, and percentage. Bivariate analysis used to find the association between variables and DASS scores. Numerical data was analyzed using the Spearman correlation test, while categorical data was analyzed using the Chi square or Fisher's exact with a significance value of <0.05 with a 95% confidence interval.

Participants provided electronic informed consent prior to starting the survey. The research was authorized by the Ethical Committee of the Faculty of Medicine Universitas Diponegoro (No. 832/EC/KEPK-RSDK/2021).

RESULT

This study involved 168 nurses in the COVID-19 isolation room at Dr. Kariadi with an age range of 22-57, the mean age is 32.27 ± 6.27, and the mean is 31. A total of 112 subjects used problem-focused, 55 subjects used emotionally focused, and one used dysfunctional (Table 1).

The mean DASS score for the subjects was 14.29 ± 13.25, with the lowest score being 0 and the highest being 60, and the median score was 10 (Table 2). There were 159 (94.6%) subjects who had DASS scores at a low level and 107 (63.7%) of them used problem focused coping strategies. Only 9 (5.4%) subjects had a DASS score (GPD) at the moderate level, and 5 (3%) of them used problem-focused coping strategies. Therefore, problem-focused coping strategies was used by majorities of the subjects.

The subject's coping strategies varied as shown on Table 3. The average number of the subject using active coping was 6.99 ± 1.2 subjects, and 6.4 ± 1.3 using instrumental support. On the emotion-focused dimension, the average subject who used religion was 7.8 ± 0.6 and used humor was 3.59 ± 1.7. On the dysfunctional dimension, the mean of subjects using self-distraction were 6.01 ±1.3 and 2.11 ± 0.6 subjects using substance use.

There was a significant association between the sex

TABLE 1
Sociodemographic characteristics of research subjects

Characteristics	F (%)	Mean ± SD; Median (min-max)	Group		
			Problem-focused (n=112)	Emotion-focused (n=55)	Dysfunctional (n=1)
Age; (year)		32.27± 6.27;31 (22–57)	32.70 ±6.1;32 (22–57)	31.44 ± 6.63;31 (22–57)	31
Gender; (%)					
Man	67 (39.9%)		46 (27.4%)	21 (12.5%)	0 (0%)
Woman	101 (60.1%)		66 (39.3%)	168.67 ± 9.709	1 (0.6%)
Marital status					
Not married yet	26 (15.5%)		14 (8.3%)	12 (7.1%)	0 (0%)
Married	139 (82.7%)		96 (57.1%)	42 (25.0%)	1 (0.6%)
Divorced	3 (1.8%)		2 (1.2%)	1 (0.6%)	0 (0%)
Level of education					
D3	104 (61.9%)		68 (40.5%)	36 (21.4%)	0 (0%)
Nurse Practitioner	64 (38.1%)		44 (26.2%)	19 (11.3%)	1 (0.6%)
Work place					
Isolation Ward	92 (54.8%)		56 (33.3%)	35 (20.8%)	1 (0.6%)
ICU Isolation	49 (29.2%)		36 (21.4%)	13 (7.7%)	0 (0%)
ER Isolation	27 (16.1%)		20 (11.9%)	7 (4.2%)	0 (0%)
Medical Condition					
Hypertension/DM	4 (2.4%)		2 (1.2%)	1 (0.6%)	1 (0.6%)
None	164 (97.6%)		110 (65.5%)	54 (32.1%)	0 (0%)
Working Position					
Head nurse	6 (3.6%)		4 (2.4%)	2 (1.2%)	0 (0%)
Staff nurse	162 (96.4%)		108 (64.3%)	53 (31.5%)	1 (0.6%)
History of suffering from COVID-19					
Once	61 (36.3%)		46 (27.4%)	15 (8.9%)	0 (0%)
Never	107 (63.7%)		66 (39.3%)	40 (23.8%)	1 (0.6%)

TABLE 2
DASS Score Characteristics

Characteristics	F (%)	Mean ± SD; median (min-max)	Group		
			Problem-focused (n=112)	Emotion-focused (n=55)	Dysfunctional (n=1)
DASS score (GPD) (mean ± SD; Median (min-max))		14.29 ± 13.25; 10 (0–60)			
Low	159 (94.6%)		107 (63.7%)	51 (30.4%)	1 (0.6%)
Currently	9 (5.4%)		5 (3%)	4 (2.4%)	0 (0%)

TABLE 3
Characteristics of the brief COPE subscale used by research subjects

Dimension	Subdimension	Average ± SD
Problem-focused coping	Active Coping	6.99 ± 1.2
	Planning	6.68±1.2
	Using instrumental support	6.4 ± 1.3
Emotion-focused coping	Acceptance	6.89 ± 1.1
	Humour	3.59 ± 1.7
	Religion	7.8 ± 0.6
	Using emotional support	6.79 ± 1.2
	Positive reframing	6.9 ± 1.1
Dysfunctional coping	Denial	4.01 ± 1.6
	Self-distraction	6.01 ± 1.3
	Behavioural disengagement	2.86 ± 1.2
	Substance use	2.11 ± 0.6
	Venting	5.29 ± 1.5
	Self-blame	4.3 ± 1.54

variable and the DASS score (p<0.000), the workplace variable and the DASS score (p=0.041), and coping strategies with the DASS score (p=0.048). There was no significant association between age, marital status, education level, medical condition, work position, and history of suffering from COVID-19 on the DASS score (Table 4).

DISCUSSION

The characteristics of the research subjects, which include age, gender, marital status, education level, medical condition, work position, history of suffering from COVID-1919, can be said to be relatively homogeneous. The average DASS score for nurses was 14.29 ± 13.25, with the lowest score being 0 and the highest score being 60 and 159 (94.6%) subjects having a low DASS score. This may be due to the COVID-19 pandemic that has lasted more than one year. Thus, nurses have already adapted to the conditions of the circumstance. Most of the nurses in this study have received vaccines that can increase their immunity, have received training on COVID-19, received incentives, and the isolation room has provided standardized PPE (Personal Protective Equipment) for nurses.[10]

There are variations of coping strategies in research subjects with problem-focused coping being the most widely used. Coping strategies are ways for

TABLE 4
The association between variables on the DASS score (GPD)

Characteristics	F (%)	Mean ± SD; Median (min-max)	p ¥	r
Age; (year)		32.27 ± 6.27;31.00 (22–57)	0.624	-0.038
Gender; (%)			<0.001*	0.268
Man	67 (39.9%)	10.06 ± 10.65;6 (0–44)		
Woman	101 (60.1%)	17.09 ± 14.08;14 (0–60)		
Marital status			0.119	-0.121
Not married yet	26 (15.5%)	18.54 ± 14.72;17 (0–48)		
Married	139 (82.7%)	13.53 ± 12.94;9 (0–60)		
Divorced	3 (1.8%)	12.33 ±10.79;17 (0–20)		
Level of education			0.666	0.054
D3	104 (61.9%)	14.09 ±13.32;9 (0–48)		
Nurse Practitioner	64 (38.1%)	14.61 ±13.22;11 (0–60)		
Work place			0.041*	-0.126
Isolation Ward	92 (54.8%)	11.18 ± 11.06;9 (0–42)		
ICU Isolation	49 (29.2%)	16.01 ± 13.79;11.5 (0–48)		
ER Isolation	27 (16.1%)	14.04 ± 13.39;11 (0–60)		
Medical Condition			0.177	-0.105
Hypertension/DM	4 (2.4%)	29.25 ±25.26;27.5 (2–60)		
None	164 (97.6%)	13.92 ±12.75;10 (0–48)		
Working Position			0.224	0.094
Head nurse	6 (3.6%)	7.67 ±8.41;4.5 (2–24)		
Staff nurse	162 (96.4%)	14.53 ±13.35;11 (0–60)		
History of suffering from COVID-19			0.387	-0.067
Once	61 (36.3%)	15.62 ±13.81;14 (0–60)		
Never	107 (63.7%)	13.52 ± 12.92;9 (0–48)		
Coping strategy			0.048*	-0.034
Problem-focused	112 (66.7%)	13.25±13.11;9 (0–46)		
Emotion-focused	55 (32.7%)	14.58±13.22;11 (0–60)		
Dysfunctional	1 (0.6%)	38		

individuals use in solving problems, dealing with changes that occur, and threatening situations, both cognitively and behaviorally. There are three types of coping strategies. Problem focused coping has the goal of solving a problem or taking action to change the status quo. Emotional focused coping focuses on emotions and aims to reduce emotional distress related to stressful situations. Lastly, dysfunctional coping is a coping strategy that tends to be unhelpful in reducing stress and usually involves denial, self-distraction, behavioral disengagement, substance use, venting and self-blame.[11]

Significant association between coping strategies

and DASS score was found, despite a very weak correlation, with negative correlation. This result shows the more often subjects use problem focused coping strategies, the lower the DASS score. This finding is in line with the theory that stressful pandemic conditions can affect many people, but the response and impact on individuals vary according to the coping strategies. Coping strategies are influenced by environmental factors (external) and personal characteristics (internal). The use of adaptive coping is one factor that influences the resilience or protective factor of nurses in dealing with the COVID-19 pandemi.[13,14] Individuals who do not use adaptive coping are more prone to experiencing mental health problems.[15] Si *et al* found that problem-focused coping can help reduce the occurrence of adverse psychological symptoms such as depression, anxiety and stress thereby reducing nurses' DASS scores.[16] Successful coping strategies will help individuals manage events that cause stress and negative emotions that can affect the DASS score.[11,17] Also, using adaptive coping strategies can reduce the incidence of mental problems in nurses in dealing with the COVID-19 pandemic.[18]

Physiological differences, susceptibility to stress, and self-concept between genders result in different responses to stressors which ultimately would affect the DASS score. This study found a significant association between gender and nurses' DASS scores with women had higher average DASS score. This is in line with research by Alnazly *et al*., which states that there is an association between gender and nurses' DASS scores.[19] In general, women are more prone to suffer from mental problems because physiological differences between women and men (i.e. genetic susceptibility, hormone and cortisol levels and others) can be reflected emotionally and behaviorally. Women are more susceptible to stress and pain than men, so they are prone to experience greater sadness and anxiety.[20]

There was no significant association between education and DASS score of subjects who served in isolation rooms. In the organizational structure of nursing management, nurses are divided into clinical managers and working nurses. Clinical managers are expected to have professional skills in managing nursing care while working nurses have professional practice skills. So that nurses with a higher level of education have higher responsibilities and leadership roles, while nurses with D3 education have an active role in nursing care so that they come into direct contact with Covid-19 patients. This situation shows both groups have a heavy workload which can be trigger for stress. This study is in line with research conducted by Cheung *et al*., which found no significant association between education and nurses' DASS scores.[21]

Nurses in this study had different workplace including ICU, ward, and emergency room. This study found a significant association between workplace and DASS score. Subjects who work in the intensive care unit has higher average DASS score than subjects who work in the emergency room or ward. That may be due to nurses on duty in the intensive care unit have more complex nursing care, such as administering medication and monitoring the patient's vital signs continuously compared to nurses who work in other places. In addition to that, this study result is also in line with Muliantino, where they found a significant association between the workplace and the DASS score.[22]

Contrary to workplace, no significant association was found between the work position and nurses' DASS scores. It may be partly explained by the fact that the mental health of the head nurses and the staff nurses are both affected by the COVID-19 pandemic. Staff nurses have a high risk of contracting the disease and are prone to psychological problems, while the head nurses can still be infected by his co-workers who directly handle COVID-19 patients. The majority of the subjects of this study are staff nurses. This finding is in line with Chowdhury, which they also did not find the association between the work position and mental problems of nurses during the COVID-19 pandemic calculated by the DASS score.[23]

The study also found no significant association between physical illness and nurses' DASS scores. This is because this study did not assess physical illness in detail so that as many as 164 (97.6%) subjects did not have a physical illness with an average DASS score of 13.92 ± 12.75. It appears that the distribution between subjects who have and do not have a physical disease is not equal. It can be concluded that physical illness is not the only factor associated with the DASS score.[24] This study is in line with Cheung *et al*., who investigated the association between physical illness and symptoms of depression, anxiety, and stress using the DASS on nurses in Hong Kong.[21]

This study has two limitations. First, environmental factors and social support were not examined, eventhough these could influence nurses' coping strategies and DASS scores. Second, data on physical illness were lacking in detail.

CONCLUSION

The study results concluded there was an association between coping strategies, gender, workplace, and the DASS score of nurses who served in the COVID-19 isolation room at Dr Kariadi Hospital. There were variations in coping strategies for nurses who work in the COVID-19 isolation room, with problem focused as the most widely use. As nurse well-being is important for safety and patient care, mental health services are needed for nurses who are constantly in stressful work condition. Further research needs to be carried out on environmental factors and social support that can affect

nurses' coping strategies, depression, anxiety, and stress also examine physical illnesses in more detail.

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