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RESEARCH ARTICLE

The Role of Perceived Social Support and Resilience in Predicting the Mental Health of Healthcare Professionals During the COVID-19 Pandemic: A Study from Indonesia

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Abstract:

Background:

The COVID-19 pandemic had a tremendous impact on Healthcare Professionals (HCPs). Social support and resilience were seen as protective factors for mental health problems. This study aimed to investigate the role of perceived social support and resilience in predicting Healthcare Professionals' mental health during the outbreak in Indonesia.

Methods:

202 HCPs (143 women and 59 men) completed a digital self-reported survey during the outbreak. A cross-sectional study was applied, and participants were recruited through a purposive sampling technique. The online survey collected information on sociodemographics, perceived social support, resilience, and mental health problems. Perceived social support was measured by The Multidimensional Scale of Perceived Social Support (MSPSS), resilience by the Connor-Davidson Resilience Scale (CD-RISC)-10, and mental health problems by the Self-Report Questionnaire (SRQ). Multivariate regression was applied to analyze the data.

Results:

Results indicated that a high resilience score was associated with low scores for depression, anxiety, and somatoform symptoms ($\beta = -4.72, p = 0.000$). On the contrary, perceived social support did not predict mental health or PTSD symptoms ($\beta = -0.56, p = 0.412$).

Conclusion:

Considering the role of resilience in reducing mental health problems, we suggest government and health authorities design an intervention program to increase HCPs' resilience.

Keywords: Social support, Resilience, Mental health, Healthcare professionals, COVID-19, Survey.

Article History

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1. INTRODUCTION

The COVID-19 pandemic was declared a major global health threat. On 27 April 2020, WHO confirmed a total of 2,810,325 cases and 193,825 deaths from the virus, with additional cases and deaths increasing daily [1]. In Indonesia alone, 8,882 cases and 743 deaths have been recorded. The pandemic is a distressing time for HCPs which consists of doctors, nurses, laboratory assistants, and other healthcare workers who have been severely affected by the fight against

the COVID-19 virus. Amid this unprecedented time, HCPs endure a huge workload and great psychological stress due to their working conditions; fear of infection, unfamiliarity with the new working environment, the requirement to wear hazmat suits all day causing, physical discomfort, continuous exposure to suffering and death of patients, and as the frontlines in the fight against the virus, HCPs had to isolate themselves from their families for long periods of time [2].

In these difficult times with heavy workloads and psychological burdens, HCPs were very much involved in handling this pandemic, especially looking after patients in various conditions and under a lot of pressure. Thus, they were

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at a very high risk of developing mental health problems [3]. A study of 1,461 healthcare workers in Indonesia from February to August 2020 reported the following results: 82% of HCPs experienced moderate burnout and 1% experienced severe burnout [4]. Furthermore, in her research, Oktavia [5] suggested that HCPs who dealt with COVID-19 patients were 1.6 more prone to emotional exhaustion and 1.5 more prone to loss of empathy. These findings indicated that we could not ignore the importance of efforts to improve psychological well-being and help prevent burnout experienced by HCPs.

HCPs could feel isolated and lonely because the virus is contagious. They needed to stay away from their loved ones for extended periods. Encouragement from the HCPs support system could help overcome challenges at the workplace throughout the pandemic. Past studies have shown that social support from colleagues, friends, and family is considered an important factor for HCPs to perform well and effectively deal with stressors in the workplace [6 - 8]. Family and friends could provide different types of support and were found to positively boost mental health [9].

The outbreak has affected the mental health of HCPs and this could possibly reduce their resilience in facing another COVID-19 wave because they may feel emotionally drained, which could hinder their ability to appropriately respond in the face of another outbreak [10]. Resilience exemplifies the individual's ability to successfully adapt to serious negative life events [11] and act as a buffer against the negative impact of stressors in difficult times [12]. Developing resilience is a way to cultivate optimistic perspectives and improve coping with difficulties [13].

As mentioned earlier, social support and resilience can act as protective factors against the negative psychological effects of COVID-19. Social support has a profound effect on burnout and may help to reduce symptoms such as emotional exhaustion, feelings of depersonalization, and impaired personal accomplishment [14 - 16]. High levels of resilience help reduce mental distress and support mental health throughout the pandemic [17]. Furthermore, psychological resilience during the pandemic is related to modifiable factors, which means people can learn to increase their resilience [18]. The researchers believe that assessing their perceived social support and resilience may assist in estimating the risks to HCPs' mental health in Indonesia.

The pandemic illustrates new working challenges for HCPs and intervention strategies to avert possible mental health problems. To our best knowledge, there are currently no studies examining perceived social support, resilience, and mental health among HCPs during the COVID-19 pandemic in Indonesia. Providing information on protective factors associated with HCPs' mental health conditions will help policymakers of the West Java Government to design psychological interventions for HCPs. This study aimed to examine protective factors associated with HCPs mental health in West Java, Indonesia, during the pandemic. The question for the present study was: "How do perceived social support and resilience predict HCPs mental health conditions during the COVID-19 pandemic?"

2. METHODS

2.1. Study Design and Participants

A cross-sectional was applied in this study, involving HCPs who were in charge of handling COVID-19 patients in West Java. The researchers selected the participants based on inclusion criteria and estimated that around 10,000 HCPs could potentially take part in this study. Sample size calculation was done by using the 5% margin of error criterion, and 370 was decided as the sample size. Qualified participants are HCPs who voluntarily wished to join the study and had to meet the following criteria: they had treated coronavirus patients. The specific data about the participants can be seen in the Table 1 at the demographic profession section. A total of 379 accessed the link and did the survey, but 177 of them were incomplete and had to be eliminated. Subsequently, 202 participants were included in this study.

2.2. Procedures

Ethical approval was published by the Research Ethics Committee of Universitas Padjadjaran, Indonesia (Reference Number No.487/UN6.KEP/EC/2020). The researchers designed an instrument for sociodemographic data collection (age, gender, area of residence, educational level, monthly income, workplace, and profession) and conducted the online survey from May to September 2020 when the COVID-19 case increased. The validated scale was then used to assess perceived social support, resilience, and mental health problems. Participants had been recruited through a purposive sampling technique and researchers shared a survey link at health/treatment centres for COVID-19 in West Java. As an appreciation, 50,000 IDR or around 3,5 USD was given as a participation fee for those who had completed the survey *via* SurveyMonkey in the form of e-money. The participants were asked to read the procedure, give consent and anonymously do the survey. They were permitted to withdraw their participation at any time without explanation. After signing the informed consent, participants completed the anonymous socio-demographic form and self-administered questionnaire.

2.3. Survey Instruments

2.3.1. *The Multidimensional Scale of Perceived Social Support (MSPSS)*

The MSPSS is a perceived social support questionnaire consisting of twelve items with three subscales: Family, Friends and Significant Others. Each item includes a seven-point Likert scale which states 1 (strongly disagree) to 7 (strongly agree). A greater perceived social support is indicated by a higher score, which may vary from 12 to 84. The MSPSS is an adaptation scale that has been used in one of the studies in Indonesia with a reliability coefficient of $\alpha = 0.85$ [19]. Other studies evaluated the reliability by conducting test-retest on the scale, carried out after 2 to 3 months from the initial data collection resulting in the value of 0.85, 0.75, 0.72, and 0.85. Thus, the Indonesian version of the MSPSS has been tested for its validity and reliability and was applicable [20].

2.3.2. Connor-Davidson Resilience Scale (CD-RISC) – 10

The CD-RISC is a scale that measures resilience and consists of ten items with a 5-point scale for each item (0-4). A high score indicates a high resilience. This scale has good reliability, a study conducted in Turkey showed the resulting alpha level for the general population was 0.89 [19]. The CD-RISC validity test was conducted on youth survivors of disasters in Indonesia. In the EFA (Exploratory Factor Analysis) test, there was 4-factor model (Group 1, n = 300), which was able to explain 52.17% variance in these factors, by excluding item number 4. The CFA test was conducted after the EFA test by using a 5 and 4-factor model in Group 2 (n = 299). The results of the CFA test showed that a 4-factor model was the best model with $\chi^2 / df = 2.571$, estimated root-square error (RMSEA) = 0.073, goodness of fit index (GFI) = 0.848, comparative fit index (CFI) = 0.830, and the Tucker-Lewis index (TLI) = 0.808). In addition, the 4-factor model demonstrated good internal consistency with Chronbach α overall scale = 0.903; factor 1 = 0.804; factor 2 = 0.712; factor 3 = 0.713; and factor 4 = 0.655 [21].

2.3.3. Self-Report Questionnaire (SRQ)

The SRQ is a questionnaire commonly adopted for mental health problems screening, which includes depression, anxiety, and somatoform disorders. The questionnaire consists of twenty items with ‘yes’ or ‘no’ options for each item. The SRQ has good internal reliability, $\alpha = 0.78$. The factor analysis test of the two SRQ factors explained 31.2% of the total variance of the questionnaire. This instrument is capable of detecting mental health problems in general, with an area under the curve (AUC) of 0.879 (SE = 0.23, 95% CI 0.83-0.92) for the overall sample and with an optimal cutoff score of 5 / 6 and a

sensitivity of 78.6% and specificity of 81.5% [22]. The scale consists of five items that measure PTSD symptoms experienced during the pandemic over a month-long period. The higher the score, the more severe the PTSD symptoms.

2.4. Data Analysis

Descriptive statistic (mean and standard deviation) was used to describe the score from each measurement. The researchers used Pearson's parametric statistics to test the correlation between variables. Multiple Regression Analysis was carried out to determine the variables to be used as predictors of mental health. Independent variables for this study were perceived social support and resilience, meanwhile, the dependent variables were mental health problems and PTSD symptoms. The researchers did not analyze the difference in demographic characteristics. However, the effect size was included in the data analysis, which showed a small (0.02-0.05), moderate (0.05-0.08) and large (≥ 0.08) effect based on a review by Cohen [23]. All tests were two-tailed, with a significance level of $p < 0.05$.

3. RESULTS

Table 1 details the participants’ demographic characteristics. The ages of healthcare professionals ranged from 22 to 57 years (M = 36.66, SD = 8.52). Most participants were female, live in the city, have completed bachelor’s degrees, and worked in a Covid-19 referral hospital. Demographic data showed that most HCPs had monthly incomes ranging from IDR 2,500,000 to IDR 10,000,000. The majority of healthcare professionals who engaged in this study were nurses, pharmacists, general practitioners, medical specialists, and laboratory assistants.

Table 1. Demographic characteristics of participants (N=202).

Variable		n (%)	
Age (M±SD)		36.66±8.52	
Gender	Female	143	(70.8%)
	Male	59	(29.2%)
Residence	City	108	(53.5%)
	Districts	94	(46.5%)
Educational Level	High school/vocational school	1	(0.5%)
	Associate degree	52	(25.7%)
	Bachelor	113	(55.9%)
	Master	32	(15.8%)
	Doctoral	4	(2.0%)
Monthly Earning	No income	4	(2.0%)
	Less than IDR 2,500,000 (< USD 178)	4	(2.0%)
	IDR 2,500,000 – 5,000,000 (USD 178-357)	73	(36.1%)
	IDR 5,000,000 – 10,000,000 (USD 357-714)	83	(41.1%)
	More than IDR 10,000,000 (> USD 714)	38	(18.8%)

(Table 1) contd.....

Variable		n (%)	
Workplace	COVID-19 referral hospital	119	(58.9%)
	Non COVID-19 referral hospital	26	(12.9%)
	Public health center	35	(17.3%)
	Health clinic	12	(5.9%)
	Independent practice	1	(0.5%)
	West Java Province Independent Isolation Centre	4	(2.0%)
	Pharmacy	4	(2.0%)
	Public health office	1	(0.5%)
Profession	Medical specialist	17	(8.4%)
	General practitioner	32	(15.8%)
	Specialist nurse	5	(2.5%)
	Nurse	71	(35.1%)
	Pharmacist	42	(20.8%)
	Laboratory assistant	8	(4.0%)
	Residents doctor	3	(1.5%)
	Clinical psychologist	2	(1.0%)
	Midwife	7	(3.5%)
	Hospital management	5	(2.5%)
	Dentist	3	(1.5%)
	Nutritionist	4	(2.0%)
	Radiographer/physiotherapy staff	3	(1.5%)

Note: N = number of participant; M = mean; SD = standard deviation; IDR = Indonesian Rupiah; USD = US Dollar.

Table 2. Descriptive statistics of the perceived social support, resilience, SRQ, and PTSD symptom scores.

Measure	Dimension	M	SD	Min	Max
Perceived social support	-	68.28	8.25	40	84
-	Family	23.92	3.37	8	28
-	Friend	21.53	3.53	12	28
-	Significant other	22.83	3.79	8	28
Resilience	-	39.62	4.76	17	50
Mental health problems	-	3.58	3.57	0	14
PTSD symptoms	-	1.26	1.31	0	5

Note: PTSD = Post-Traumatic Stress Disorder; M = mean; SD = standard deviation; Min = Minimum; Max = Maximum.

3.1. HCPs' Perceived Social Support, Resilience, and Mental Health Condition

Table 2 shows the mean, standard deviations, and ranges of the MSPSS, the (CD-RISC)-10, and the SRQ scores. Mental health problems and PTSD symptom scores were positively skewed. In contrast, perceived resilience was evenly distributed, perceived social support and Friend dimensions were evenly distributed, while Family and Significant Other dimensions were negatively skewed.

3.2. Association between Demographic Variables, Perceived Social Support, Resilience, Mental Health Problems, and PTSD Symptoms

The results showed that there was no significant relationship between gender and perceived social support, resilience, mental health problems and PTSD symptoms. Regarding the type of profession, there was a significant

difference found in perceived social support ($F(2,199) = 3.11, p = 0.047$) as well as PTSD symptoms ($F(2, 199) = 4.17, p = 0.017$). Other professions ($1.61 \pm 1.33, p = 0.026$) scored higher on PTSD symptoms and differed significantly from doctors, medical specialists (1.08 ± 1.29) and nurses (1.05 ± 1.25). Power calculation showed little effect for both significant comparisons ($\omega^2 = 0.02$ and $\omega^2 = 0.03$). The analysis results also revealed that there was no significant difference in perceived social support, resilience, mental health problems, and PTSD symptoms based on the workplace (Table 3).

The results showed a positive correlation between perceived social support and resilience ($r = 0.424, p = 0.000$), and social support appeared to have a negative correlation with mental health problems and PTSD symptoms. Findings in this study also indicated a correlation between mental health problems (depression, anxiety, and somatoform disorders) with PTSD symptoms ($r = 0.509, p = 0.000$).

Table 3. Pearson product-moment correlation of variables.

S.No.	Variable	2	3	4
1	Perceived Social Support	0.42**	-0.25	-0.16**
2	Resilience	-	-0.49**	-0.32**
3	3) Mental Health Problems	-	-	0.509**
4	4) PTSD Symptoms	-	-	-

Note: * $p < 0.05$; ** $p < 0.01$.

Table 4. Multiple regression analysis for the prediction of mental health and PTSD symptoms.

Independent Variable	B	SE	β	t	p	R ²	Adjusted R ²
Model 1: Mental Health Problems as DV	-	-	-	-	-	0.24	0.241
Perceived Social Support	-0.23	0.028	-0.56	-0.822	0.412	-	-
Resilience	-0.35	0.051	-0.472	-6.95	0.000	-	-
Model 2: PTSD Symptoms as DV	-	-	-	-	-	0.103	0.094
Perceived Social Support	-0.005	0.011	-0.035	-0.477	0.634	-	-
Resilience	-0.084	0.020	-0.305	-4.11	0.000	-	-

Note: DV = Dependent variable.

The present study tested two models. The first model perceived social support and resilience as independent variables (IV), and mental health problems as dependent variables (DV). The second model was perceived social support and resilience as independent variables (IV), and PTSD symptoms as dependent variables (DV). Table 4 shows that resilience ($\beta = -4.72, p = 0.000$) was significantly correlated with lower depression, anxiety, and somatoform symptoms. Higher resilience also predicted lower PTSD symptoms ($\beta = -0.305, p = 0.000$). Perceived social support did not predict mental health or PTSD symptoms. Perceived social support and resilience explained 24% of the total variance in mental health problems (adjusted $R^2 = 0.24$), while of those variables, there was only a 9% the variance in PTSD symptoms (adjusted $R^2 = 0.094$).

4. DISCUSSION

This research was one of the first to examine perceived social support, resilience, mental health problems, and PTSD symptoms among HCPs during Covid-19 in Indonesia. The findings revealed a significant difference in perceived social support and PTSD symptoms among various professions. The pharmacist, laboratory staff, hospital administrative, and radiology staff showed higher PTSD symptoms. Although they were not directly in contact with Covid-19 patients, other HCPs could still experience PTSD symptoms due to repeated exposure to distressing details of events caused by the pandemic [24]. Even without experiencing traumatic events directly, people can still show PTSD symptoms because they may witness firsthand the direct effects on others or hear directly how others’ lives have been impacted by the pandemic [25]. As we know, the pandemic has already lasted for almost two years, so it could eventually prove to be traumatic for everybody, not only HCPs exposed to Covid-19 patients on a daily basis.

The researchers found a positive correlation between perceived social support and resilience, and social support was found to have a negative correlation with mental health

problems (depression, anxiety, somatoform) and PTSD symptoms. While mental health problems (depression, anxiety, somatoform) are positively associated with PTSD symptoms. Past studies have shown time and again how social support contributed to the promotion of mental health [14, 26]. The longitudinal study also demonstrated a positive correlation between social support and mental health [27]. In general, social support serves as a personal resource for people to handle uncertainty caused by negative life events and increase a sense of control over one’s life with the help of others. A meta-analysis study explained that resilience was highly correlated with better mental health [6, 28]. Our findings are comparable to one study conducted in Indonesian HCPs that indicated a correlation between resilience and anxiety. A higher score in anxiety was associated with lower resilience [29]. Resilience is a skill that helps one to adapt when facing negative, stressful events or adversity, so it can be explained why higher resilience is correlated to better mental health because one indicator of good mental health is to be able to cope with an adverse situation effectively.

Apart from showing a correlation, higher resilience also predicted a lower chance for symptoms of depression, anxiety, somatoform, and PTSD. Resilience is a collection of behaviours that motivate individuals to endure and move forward despite adversity [30]. Previous research supported our results, which demonstrated that resilience is associated with reduced anxiety and depression among HCPs [1, 3, 27]. The way resilience helped promote mental health might be related to coping strategies [7] suggested that positive emotions are considered to have a correlation with high resilience, and coping strategies are believed to mediate the two. Based on this study, positive emotions may increase resilience through the role of a coping strategy. Our results were backed by previous research, which showed the ability to cope emotionally was related to lower resilience [31]. We argued that the coping style adopted by HCPs during the pandemic might play a role in the link between resilience and mental health.

Although social support is widely known as a protective

factor against mental health problems, our results demonstrated that perceived social support did not help to predict mental health or PTSD symptoms among HCPs. Despite the importance of social support, we might overlook the dynamic of the Covid-19 pandemic. The constant struggle to fight against the virus and its subsequent mutations force HCPs to work beyond their limit. This could create resilience in HCPs because they need to adapt constantly. As a study among HCPs in China suggested, resilience is a partial mediator of the effect of social support on mental health [8]. This result revealed that social support can't stand alone in protecting an individual's mental health, there should be another protective factor that comes from an individual's own effort in adapting to adversity.

This study has several limitations, such as using a cross-sectional design which was unable to provide a statement on the causal relationships of the two variables. Also, a large number of participants disengaged from the study due to the lengthy survey. We suggest a shorter version of the survey which will require responses to all questions. Future research should collect a more sizeable sample to establish generalization and more proportional demographic samples to find comprehensive results. Furthermore, we suggest to use other measurement tools except self-report measure such as focus group discussions and interviews. In addition, a longitudinal study is also recommended in order to yield a more profound understanding of the impact of perceived social support and resilience on mental health during the pandemic.

CONCLUSION

This study found a significant difference in perceived social support and PTSD symptoms based on a healthcare professional. HCPs such as pharmacists, laboratory staff, hospital administrative and radiology staff showed higher PTSD symptoms. The perceived social support correlated with resilience but was negatively associated with mental health problems and PTSD symptoms. Higher resilience also predicted lower mental health problems and PTSD symptoms. Considering the role of resilience in reducing mental health problems, we suggest government and health authorities design an intervention program to increase HCPs resilience.

LIST OF ABBREVIATIONS

MSPSS = Multidimensional Scale of Perceived Social Support

SRQ = Self-Report Questionnaire

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethical approval was obtained from the Research Ethics Committee of Universitas Padjadjaran, Indonesia (Reference Number No. 487/UN6.KEP/EC/2020).

HUMAN AND ANIMAL RIGHTS

No animals were used for studies that are the basis of this research. All the humans were used in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1975, as revised in 2013 (<http://ethics.iit.edu/ecodes/node/3931>).

CONSENT FOR PUBLICATION

Informed consent was obtained from all participants of this study.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data supporting the funding of this study will be available from the corresponding author [A.S].

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None.

CONFLICT OF INTEREST

The authors declare no conflicts of interest, financial or otherwise.

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