Enfermería Clínica

The relationship between social support and emotional status among patients with chronic obstructive pulmonary disease[☆]

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Abstract

Objective: This study intended to evaluate the relationship between social support and emotional status among patients with chronic obstructive pulmonary disease (COPD).

Method: The study used a cross-sectional method with a consecutive sampling technique at three public hospitals in DKI Jakarta. Data from 200 samples were processed using Chi-Square statistical tests. Data were obtained through questionnaires.

Result: The results of the analysis of the relationship between social support and emotional status in COPD patients showed that there was no relationship between social support with emotional status (depression) ($p = 0.921$), emotional status (anxiety) ($p = 0.184$), and emotional status (stress) ($p = 0.795$).

Conclusion: Many factors affected emotional status in COPD patients. This study has not been able to prove the relationship between social support and emotional status among patients with COPD.

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Introduction

Chronic obstructive pulmonary disease (COPD) as a disease that results in decreased airflow.[1] In 2015, an estimated 3.17 million people died due to COPD.[1] The WHO has predicted that in 2020, COPD will be the third cause of morbidity and mortality in developed or developing countries. This is due to smoking behavior and industrial development, which increases air pollution and creates an unhealthy environment. Basic Health Research has shown that of a sample of over one million, over 500,000 suffered from COPD, and 2.7% lived in DKI Jakarta.[2]

In terms of pathology, COPD is chronic, irreversible, and slowly worsens over time.[2] The Global Initiative for Chronic Obstructive Lung Disease stated that specific signs and symptoms of COPD include persistent breathing difficulty caused by damage to the airway and alveoli.[3] Patients with COPD may experience wheezing, breathing difficulty, and

fatigue, especially during physical activity.[3] In addition, they suggested that patients may appear to have a narrow chest. These signs and symptoms suggest that patients with COPD may adopt passive coping strategies, such as avoiding activity in order to prevent breathing difficulty. Patients with COPD may also become dependent on medication. Both of these aspects of the disease could influence patients' emotional state.

An individual's emotional state is a reaction which caused of people judgment or self-judgment, the general assessment of emotional status was depression and anxiety. People with COPD have a high risk of depression compared to normal people.[4] In 2008, Claus and Andreas conducted a study of the mental health of 20 patients with mild to moderate COPD. Their findings showed that 55% of patients with PPOK had been diagnosed with a mental disorder compared to other clinical patients. Many patients in the COPD group were diagnosed with anxiety disorder, especially panic disorder with agoraphobia, which means avoiding situations that stimulate panic.

Anxiety and depression are social factors that affect patients' general health status. Social support is a psychosocial resource that plays an important role in managing and reducing the progression of chronic disease.[5] Compared to those who received no social support, patients with COPD who received social support had shorter hospital stays, less exacerbation, better health status, and better health behavior and health management, such as higher levels of smoking cessation and physical activity.[5] Previous studies have shown a relationship between anxiety and social support in patients with COPD. For example, conducted a multiple linear regression analysis of data from 452 respondents showing that instrumental support, disappointment with support, and support from people who showed no sympathy or sensitivity could increase anxiety in patients with COPD.[5]

Social support may reduce or slow the improvement of several chronic degenerative diseases, including COPD. Research has shown how emotional status and social support are related to COPD. However, studies on these topics have not been conducted in Indonesia, with evidence especially lacking in Jakarta. The authors wanted to analyze the correlation between social support and the emotional status of COPD patients in Jakarta. Indonesian culture is different from that in other countries in which research on this topic has been conducted, and this may influence findings.

Method

Non-probably and consecutive sampling was used to recruit COPD outpatients from three hospitals in Jakarta. To be included in the study, patients had to have a COPD diagnosis and sufficient communication skills. They also had to be of sound mind. Patients were excluded if they had a diagnosis of schizophrenia or depression or if they had difficulty breathing or a breath rate of over 28/second during data collection. The total sample was 200 respondents.

Results

This study involved 200 patients with COPD, the majority were male (68.5%), had completed elementary and junior high school (43%), and were married (71.5%). Respondents' mean age was 61.64, and their mean income was Rp. 2,814,000. Some patients had a normal body mass index (19%). Most patients had no comorbidity (41.5%) or smoking history (61.0%). About a third of the sample smoked more than 20 cigarettes each day (34.0%), and the most common cigarette type was filtered (35.0%). The majority of respondents had no history of symptom exacerbation (77.5%).

In Table 1, the relationship between social support and depression among patients with COPD has been shown. These findings showed that normal levels of depression were found in 89 respondents who had social support and 85 respondents who did not have social support. Statistical analysis showed no significant association between social support and emotional status ($p = .921$). However, more respondents with social support had depression levels within the normal range than those who did not have social support.

Table 1 Social support and depression among patients with chronic obstructive chronic pulmonary disease ($n = 200$).

	Depression severity					Total	p
	Normal	Mild	Moderate	Severe	Extremely severe		
Social support	89	8	4	1	0	102	
No social support	85	8	3	2	0	98	0.921
Total	174	16	7	3	0	200	

Table 2 Social support and anxiety among patients with chronic obstructive pulmonary disease ($n = 200$).

	Anxiety					Total	p
	Normal	Mild	Moderate	Severe	Extremely severe		
Social support	51	29	10	7	5	102	
No social support	39	29	10	8	2	98	0.184
Total	90	58	30	15	7	200	

Table 3 Social support and stress among patients with chronic obstructive pulmonary disease (n = 200).

	Stress					Total	p
	Normal	Mild	Moderate	Severe	Extremely Severe		
Social support	92	6	3	1	0	102	
No social support	84	9	4	1	0	98	0.795
Total	176	175	7	2	0	200	

In Table 2, the relationship between social support and anxiety among patients with COPD has been shown. The findings showed that 51 respondents with social support and 39 respondents without social support had normal levels of anxiety. The number of respondents with mild anxiety was similar between groups. There were seven respondents with severe anxiety and five with extremely severe anxiety among those who had social support. There were eight respondents with severe anxiety and no respondents with extremely severe anxiety among respondents without social support. Statistical analysis showed no significant relationship between social support and anxiety (p = .184). However, respondents with social support had normal to extremely severe anxiety levels.

In Table 3, the relationship between social support and stress among patients with COPD has been shown. These findings showed that 92 respondents with social support and 84 respondents without social support had a normal stress levels. However, nine respondents with mild stress and four respondents with moderate stress had no social support, while those who had social support, six had mild stress and three had moderate stress. The number of respondents who had severe stress was similar between those with social support and those without. Statistical analysis showed a significant association between social support and stress level (p = .795). However, results showed that there were more respondents with a normal level of stress in the group that had social support compared to the group who did not.

According to this study, 102 COPD patients (51%) had social support, and 98 (49%) did not. One hundred seventy four respondents (87%) had normal levels of depression, 16 (8%) had mild depression, seven (3.5%) had moderate depression, three had severe depression, and none had extremely severe depression. Ninety respondents (45%) had normal levels of anxiety, 58 (29%) had mild anxiety, 30 (15%) had moderate anxiety, 15 (7.5%) had severe anxiety, and seven (3.5%) had extremely severe anxiety. Anxiety is a problem in patients with COPD. Breathing difficulty, a cardinal manifestation of COPD, can be worsened by anxiety. In COPD patients, anxiety may be related to their reduced ability to engage in daily activities and social roles or to smoking and medication, such as beta-agonists and theophylline. The findings of this study showed that 176 respondents (88%) had normal stress levels, 15 (17.5%) had mild stress, seven (3.5%) had moderate stress, two (1.0%) had severe stress, and no respondents had extremely severe stress. This study showed no correlation between social support and emotional status, whether this was depression (p = .921), anxiety (p = .184), or stress (p = .795).

Discussion

According to this study, the average age of patients with COPD was 61.64 years old. This was similar to the figure found in a study conducted by the Semarang Health Department,[6] which reported that the majority of patients with COPD were over 45 years old. The present study has suggested that the incidence of COPD is higher in males than females. This makes sense in light of evidence suggesting that smoking increases a patient's risk of developing COPD by exposing them to hazardous substances and that the prevalence of smoking is higher in males than females.[6] However, there was some discrepancy between these findings, which reported that between 54.5 and 69.4% of smokers were male, while 1.2–30.6% were female.

In the present study, 11 patients (5.5%) were illiterate, 86 (43%) had completed elementary and junior high school, 64 (32%) had completed senior high school, and 39 (19.5%) had completed their Diploma 3 (D3). These findings were different from a study by Usman, Yunus, and Ginting (2016), which showed that of 36 respondents, 22.2% had completed elementary school, 22.2% had completed junior high school, 30.6% had completed senior high school, and 25.0% had completed a diploma or post-baccalaureate. However, both studies supported, which suggested that 70.8% of 452 respondents did not complete a bachelor's or postgraduate degree.[7] Education level may be related to the attitude and characteristics of patients with COPD. For example, patients with COPD who had only completed elementary school level were more likely to have depression compared to those who had completed senior high school or above (OR: 3.67: CI 95%).[4]

The findings of the present study showed that the average income of patients with COPD was Rp. 2,814,000, and the median income was Rp. 2,000,000 (95% CI: 2.307.175–3.321.824), with a standard deviation of 3.638.341. The lowest income was Rp. 500,000, and the highest income was 25.000.000. These findings were different from those, which suggested that the average income of patients with COPD was $40.000 ($\pm$ Rp. 560,000).[7] Income may affect the health status of patients with COPD.

According to the present study, 57 patients (28.5%) were not married or widowed, and 143 patients (71.5%) were married. Patients with COPD with poor social support were more likely to have been widowed.

In this study, 36 patients (10%) were underweight, 85 (42.5%) were normal weight, 43 (21.5%) were overweight, and 36 (18%) were obese. These findings were similar to Usman, Yunus, and Ginting's (2016) findings, which

showed that the majority of patients with COPD were of normal weight ($n = 41$; 40.6%), with smaller numbers being underweight ($n = 22$; 21.8%) and overweight ($n = 36$; 37.6%).

According to the present study, 83 patients (41.5%) had no comorbid conditions, 71 (35.5%) had one comorbid condition, and 46 (23%) had more than one comorbid conditions. Comorbidity may worsen the health status of COPD patients, and one of the most common comorbidities in patients with COPD is depression. This is associated with breathing difficulty, a decrease in exercise capacity and quality of life, and an increase in exacerbation risk and the utilization of health services, especially inpatient services.[8]

Of the total sample in this study, 122 patients had a smoking history (70 smoked filtered cigarettes, and 52 smoked non-filtered cigarettes), and 78 did not. Of those who had a smoking history, 54 smoked 20 cigarettes per day, and 68 smoked more than 20 cigarettes per day. These findings were similar to a study by Putra, Bustamam, and Chairani (2013), which study reported that 64.3% of patients with COPD had stopped smoking. Smoking is a major cause of pulmonary irritation and damage, and in one study, 80–85% of patients with COPD had a smoking history.[9] Smoking can be seen as having three levels of severity: mild (0–10 cigarettes/day), moderate (11–20 cigarettes/day), and severe (more than 20 cigarettes/day).[10] The risk of developing COPD for people who smoked non-filtered cigarettes has been shown to be one to two times that of people who smoked filtered cigarettes.[11]

In this study, 70 patients (35%) had a history of symptom exacerbation, and 130 (65%) did not. Study conducted between 2010 and 2011 in Australia, China, Korea, and Taiwan reported that patients with COPD had four categories of CAT score: 0–9, 10–19, 20–29, and 30–40 with exacerbation medians of more than 24, 14, 9, and 5 weeks, respectively. Respiratory complaints were assessed by CAT. There were several statements on these questionnaires, one of which asked about symptom exacerbation.[12]

According to this study, 102 COPD patients (51%) had social support, and 98 (49%) did not. In patients with COPD, social support has been associated with shorter hospital stays, less acute symptom exacerbation, better health status, and greater health promotion and self-management behavior, such as giving up smoking and increasing physical activity.[7] Relationships between family, friends, and colleagues and the quality of these relationships were not investigated in this study, but these could affect the support patients with COPD receive. In addition, personal factors, such as personal structure, norm value, and gender could affect social support.[7]

In this study, 174 respondents (87%) had normal levels of depression, 16 (8%) had mild depression, seven (3.5%) had moderate depression, three had severe depression, and none had extremely severe depression. Depression has been associated with poor health status in patients with COPD. Overall, 90 respondents (45%) had normal levels of anxiety, 58 (29%) had mild anxiety, 30 (15%) had moderate anxiety, 15 (7.5%) had severe anxiety, and seven (3.5%) had extremely severe anxiety. Anxiety is a problem in patients with COPD. Breathing difficulty, a cardinal manifestation of COPD, can be worsened by anxiety. In COPD patients, anxiety may be related to their reduced ability to engage in daily activities and social roles or to smoking and

medication, such as beta-agonists and theophylline. The findings of this study showed that 176 respondents (88%) had normal stress levels, 15 (17.5%) had mild stress, seven (3.5%) had moderate stress, two (1.0%) had severe stress, and no respondents had extremely severe stress.

The correlation between social support and emotional status

This study showed no correlation between social support and emotional status, whether this was depression ($p = .921$), anxiety ($p = .184$), or stress ($p = .795$). The clinical prevalence of depression in patients with stable COPD was between 10 and 19%.[13] Depression risk was OR 2.5; CI 95%, and for severe depression, it was between 19.4 and 50%. Anxiety and depression often occurred in COPD patients and were likely to worsen a patient's condition, in some cases, leading to death. Although, this study has not been able to prove the relationship between social support and emotional status among patients with COPD, however that loneliness and depression could increase when patients and their spouses received less social support from family and friends.

The results of this study are supported by the results of research in Turkey which explains loneliness, depression, and family support in 30 COPD patients.[8] They found that loneliness, depression, and social support from family and friends had the same impact on COPD patients as it did for their spouses. They also found that loneliness and depression could increase when patients and their spouses received less social support from family and friends.[8] Therefore, COPD patients may be susceptible to anxiety and depression. Social support is, therefore, an important factor in COPD. However, the present study showed no significant correlation between social support and emotional status, which may be due to respondents' culture and customs.

Conflict of interests

The authors declare no conflict of interest.

Acknowledgements

References

1. World Health Organization (WHO). Chronic Obstructive Pulmonary Disease (COPD). Geneva: World Health Organization; 2017. Available from: http://www.who.int/mediacentre/factsheets/fs315/en/

2. Badan. Penelitian dan Pengembangan Kesehatan Kementerian Kesehatan Republik Indonesia. In: Riset Kesehatan Dasar 2013. Jakarta: Kementerian Kesehatan Republik Indonesia; 2013. Available from: http://www.depkes.go.id/resources/download/general/Hasil%20Riskesdas%202013

3. Global Initiative for Chronic Obstructive Lung Disease (GOLD). Pocket Guide to COPD Diagnosis, Management, and Prevention [document on the internets]; 2017. Available from: http://

goldcopd.org/wp-content/uploads/2016/12/wms-GOLD-2017-Pocket-Guide.pdf.

4. DiNicola G, Julian L, Gregorich SE, Blanc PD, Katz PP. The role of social support in anxiety for persons with COPD. J Psychosom Res. 2013;74:110–5, http://dx.doi.org/10.1016/j.jpsychores.2012.09.022.

5. Nurfitriani U, Faisal Y, Tribowo TG. Prevalens depresi pada penderita PPOK menggunakan mini international neuropsychiatric interview version ICD-10. J Respir Indo. 2016:28.

6. Hastono, S. Analisis Data Kesehatan [unpublished thesis]. Depok: Universitas Indonesia; 2007.

7. Riani AZ. Perbedaan Kecemasan antar Pasien Asma dan Penyakit Paru Obstruktif Kronis (PPOK) di RSUD. DR. Moewardi [unpublished thesis]. Surakarta: Universitas Sebeleas Maret Surakarta; 2011.

8. Kara M, Mirici A. Loneliness, depression, and social support of Turkish patients with chronic obstructive pulmonary disease and their spouses. J Nurs Scholarsh. 2004;36:331–6, http://dx.doi.org/10.1111/j.1547-5069.2004.04060.

9. Grossman SC, Porth CM. Porth's pathophysiology concepts of altered health states. China: Lippincott Williams & Wilkins; 2014.

10. Setyanda YO, Sulastri D, Lestari Y. Hubungan merokok dengan kejadian hipertensi pada laki-laki usia 35-65 tahun di Kota Padang. Jurnal kesehatan andalas. 2015;4:434–40.

11. Puspitasari, SD, Hubungan Antara Kebiasaan Merokok Dengan Kejadian Penyakit Paru Obstruktif Kronik (PPOK) Di RS Paru Jember [unpublished thesis]. Jember: Universitas Jember; 2012.

12. Kunik ME, Roundy K, Veazey C, Souchek J, Richardson P, Wray NP, et al. Surprisingly high prevalence of anxiety and depression in chronic breathing disorders. Chest. 2005;127:1205–11, http://dx.doi.org/10.1016/S0012-3692(15)34468-8.

13. GOLD. Pocket guide to COPD diagnosis, management, and prevention. Global Initiative for Chronic Obstructive Lung Disease (GOLD); 2015. Retrieved from http://www.goldcopd.org/guidelines-pocket-guide-to-copd-diagnosis.html.