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Spirituality Well-Being, Health Status, Nutritional Status and Their Relation to Illness Perception in Chronic Obstructive Pulmonary Disease

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Abstract: *COPD (Chronic Obstructive Pulmonary Disease) is a lung disease characterized by persistent progressive airflow limitation. COPD is one of the respiratory disorders that are often found in developed and developing countries with increasing prevalence. The purpose of this study was to determine spirituality well-being, nutritional status, and health status and their relationship to the perception of illness. This study used a quantitative correlational research design with a cross-sectional approach. The population of this study were patients at the pulmonary polyclinic of the Respira Lung Hospital Yogyakarta who suffered from COPD, totaling 100 respondents. The data collection method was carried out by distributing the* Revised Illness Perception Questionnaire *IPQ-R,* Spiritual Well-Being Scale (*SWBS), Mini Nutritional Assessment (MNA) and* COPD Assessment Test (*CAT) questionnaires. The results showed that 61% of respondents were male, 78% of respondents were over 55 years old, 75% of respondents were in the high spiritual well-being category, 63% of respondents had moderate health status, 35% of respondents were malnourished and at risk of malnutrition, 85% of respondents had a moderate perception of illness. The results of the bivariate test showed that the p-value for spirituality well-being (SWB), health status, and nutritional status on the perception of illness were 0.257; 0.72 and 0.28, respectively. It can be concluded that there is no relationship between SWB, health status, and nutritional status with the perception of illness in COPD patients. Suggestions are the need for family assistance in caring for COPD patients, providing diet, and the need for peer groups among COPD patients.*

Keywords: COPD (Chronic Obstructive Pulmonary Disease), Health Status, Nutritional Status, Perception of Illness, Spirituality Well-Being

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INTRODUCTION

Chronic Obstructive Pulmonary Disease (COPD) is one of the health problems that occurs throughout the world; this disease can occur in both developed and developing countries. COPD is an irreversible condition in which the airways narrow, airflow obstruction increases, and the lungs lose their elasticity. The World Health Organization (WHO) in 2022 stated that chronic obstructive pulmonary disease (COPD) is the third leading cause of death in the world. Based on data from the Global Burden Diseases 2019 Diseases and Injuries Collaborators, it shows that COPD sufferers in the world have 209 incidents per 100,000 population with 3.2 million deaths (KEMENKES RI 2024). The number of general cases of COPD globally accounts for 213.3 million cases. In 12 Southeast Asian

countries, moderate to severe COPD in people over 30 years of age averages 6.3%. The prevalence of COPD in Indonesia is estimated to be 4.8 million people, with a prevalence of 5.6% (PDPI 2023). The prevalence of COPD in Indonesia continues to increase along with the increasing smoking habit in Indonesia based on Survey Kesehatan Indonesia 2023. In addition, the increase in smoking prevalence tends to be higher in the adolescent group aged 10 to 18 years, which is around 7.2%, increasing to 9.1% in 2018, or almost one in ten children in Indonesia smoke (KEMENKES,2021). Meanwhile, the prevalence for the DIY region is 3.1%. This is also related to the increasing prevalence of smoking in adolescents, which is 8.8% (Kemenkes RI 2016) and 9.1% (Riset Kesehatan Dasar (2018).

Increasing the severity of COPD will have an impact on the patient's quality of life. Patients with very severe severity are 5.44 times more likely to experience poor quality of life than patients with mild severity (Mizarti et al. 2019). Quality of life is subjective and varies depending on the individual's perception of health and the ability to maintain it. The results of (Ośmiałowska et al. 2022) study on the relationship between illness perception and quality of life involving 202 cancer patients at the Lower Silesian Oncology Center found a p-value of 0.03 (<0.05) that indicated that there is a significant relationship between illness perception and quality of life of respondents. The perception of illness will determine how a person will choose, organize, and give meaning that will influence the behavior that appears in themselves (Agustina 2019). The perception of illness in COPD patients has an impact on the behavior and emotional condition of patients who consider their lives valuable or not (Singh and Rejeb 2024). stated that the perception of illness is identified as one of the factors related to depression in patients with chronic diseases.

The perception of illness in COPD patients is very important because if the patient has a bad perception of their illness, it will affect the patient's quality of life. Quality of life is a person's expectation of their life related to the reality they are facing. The perception of illness is one of the psychological dimensions of quality of life that can be influenced by physical and spiritual aspects. The physical aspects that will be seen in this study are general health status and nutritional status, while the spiritual aspect is assessed based on spiritual well-being. Spiritual well-being is a source of strength that increases a person's self-confidence and ability to overcome life's problems well. Spiritual health is a form of a person's effort in building an intimate relationship with God, which is the basis of belief or faith in his life. Every time someone responds positively to the teachings, values, or provisions of religious law, he also radiates good spiritual well-being. Well-maintained spiritual well-being will enable COPD patients, from mild to severe, to respond positively to every event, incident, or experience in their life. Even though someone is facing a difficult situation, a bad experience, or an unwanted incident that befalls them, with good spiritual well-being, sufferers will still have optimism, self-confidence, and hope for a better future (Tumanggor, R., & Dariyo 2021). In a study conducted by (Kotlińska-Lemieszek et al 2022) it was found that spiritual well-being was relatively low in people with moderate to very severe COPD and inoperable lung cancer. Spiritual well-being was lower in COPD patients with higher symptom burden, poor mental condition, more disease exacerbations, and active smokers. Spiritual well-being was higher in individuals with mild degrees.

The physical aspects that will be seen in this study are health status and nutritional status. Health status is a measure of how people perceive their health and is considered a good global assessment of a person's well-being (CDC, 2025). Good health status can make a person more productive in something, especially when doing activities. This is because health is important in determining a person's survival (Rakasiwi, L. S., & Kautsar 2021). Measuring health status is useful for determining how big the problem is with the disease, determining the causative factors, knowing potential solutions, and determining the impact of interventions. Measuring the impact of disease on a

population in terms of mortality and morbidity has very important consequences for planning effective ways to reduce the burden of disease and setting priorities.

Nutritional status is an important factor in the course of the disease in COPD patients. People with COPD usually have low nutritional status. Low nutritional status in COPD patients occurs due to decreased food intake. In addition, low nutritional status occurs because when breathing, patients require high energy, resulting in reduced calories and protein in the body (Husnah 2020). COPD is a chronic disease, one of which has an impact on changes in BMI, and the impact on laboratory test results can be seen in panel micronutrients. Changes in BMI in COPD patients occur because patients usually experience weight loss (Soemarwoto et al. 2019). Weight loss experienced by COPD patients is due to decreased appetite (Pakpahan 2022). Decreased appetite in COPD patients is caused by nausea and shortness of breath (dyspnea), so this decreased appetite affects the patient's food intake. Food intake that is not sufficient for the body's needs in COPD patients causes weight loss and has an impact on changes in the patient's BMI (Pakpahan 2022). Based on previous population studies that have been conducted, there are 19-60% of COPD patients who experience malnutrition (Soemarwoto et al. 2019). So that weight loss in COPD patients can affect the quality of life of patients (Soemarwoto et al. 2019). Malnutrition that occurs in COPD sufferers has a negative effect on lung structure, lung function and elasticity, breathing regulation, lung endurance and strength, and defense mechanisms in lung immunity (Wahyuningsih 2020). Malnutrition in COPD sufferers can also cause lung function to worsen and increase the severity of COPD (Srianuris 2021).

The referral hospital for respiratory diseases in the Special Region of Yogyakarta is the Respira Yogyakarta Hospital. The Respira Yogyakarta Lung Hospital has the task of providing comprehensive health services, especially lung and respiratory tract health. Based on the results of a preliminary study at the Respira Lung Hospital in Yogyakarta, data on the incidence of COPD was obtained; namely, in 2020 the number of inpatients from January to December was 298 people. Meanwhile, in 2021 the number of patients from January to December was 27,797 outpatient visits.

Based on the fact that COPD is a chronic disease with irreversible symptoms, patients need to have a good perception of illness in order to improve their motivation and quality of life. From the explanation above, the researcher will see the spiritual well-being, health status, and nutritional status and their relation with the perception of illness of COPD patients at the Respira Hospital in Yogyakarta.

METHODS

The method that is used in this study is descriptive correlation research with a cross-sectional approach to see the relationship between spiritual well-being, health status, and nutritional status with the perception of illness in COPD patients at Respira Hospital Yogyakarta. This research has been tested ethically based on the Ethical Clearance number 01/KEPK/I/2024 from the Yogyakarta Respira Lung Hospital and has obtained a research permit with a reply letter number 500.10.3.1/10.

The population used by the researcher was COPD patients at the Respira Yogyakarta polyclinic, with 100 respondents calculated based on the Slovin formula. Researchers prescribed the sample criteria: COPD as the primary diagnosis by medical record, no comorbidities, severity of COPD in GOLD 2-GOLD 4, no memory or mental disorders, and no other accompanying illnesses that could affect nutritional status. Exclusion criteria are for patients with dyspnea who refused to participate in research. The sampling technique was accidental sampling with a non-random technique that is taken accidentally until the quota is fulfilled.

The variables of this study are spiritual well-being, health status, nutritional status, and illness perception. Other variables that will be studied in this research are age and gender, which can influence the perception of illness and health status. The variable of illness perception in this study was measured using a translation of the Revised Illness Perception Questionnaire (IPQ-R). IPQ-R has been proven to be a valid and reliable scale for determining illness perception in COPD patients with an r value of 0.7 and a Cronbach alpha coefficient of 0.755 (Hadisa, Susanti, and Robiyanto 2017). The instrument used by researchers to see spiritual well-being is the Spiritual Well-Being Scale (SWBS). SWBS has been tested for validity and reliability, with the results of the construct validity test being 0.96 and the Cronbach's alpha coefficient value being 0.879. The data collection instrument used by the researcher to measure health status was the MNA questionnaire. (Woldekidan et al. (2021) measured the accuracy of the MNA at 91% (95% CI, 87.5%–94.9%) with sensitivity and specificity tests of 87.9% and 89.6%, respectively. Researchers used the COPD Assessment Test (CAT) questionnaire instrument containing 8 questions to measure nutritional status. Internal reliability was 0.85–0.98, and test-retest reliability was 0.80–0.96. Convergent and longitudinal validity using Pearson correlation coefficients were 0.69–0.82 (Gupta et al. 2014)

This study has a confidence level of 95% with $\alpha < 0.05$. The principal analysis stage includes univariate analysis to see descriptive statistical data for each variable and non-parametric independent difference test statistics using Mann-Whitney. The Mann-Whitney test is to see the relationship between spirituality, well-being variables, health status, nutritional status, and the perception of illness variable.

RESULTS

The study was conducted at the Respira Lung Hospital in Yogyakarta from December 2023 to January 2024. The results of the study obtained the following demographic data:

Table 1. Univariate Analysis

Description		Frequency	Percentage (%)
Gender	Male	61	61
	Female	39	39
Ages	12-25	1	1
	26-45	4	4
	45-54	17	17
	55-65	39	39
	66-74	29	29
	75-90	10	10
Spirituality Well-Being	High	75	75
	Moderate	25	25
Healthy Status	Very Good	6	6%
	Good	16	16%
	Average	63	63%
	Bad	15	15%
	Very Bad	0	0%
Nutritional Status	Normal	65	65
	Risk of Malnutrition	32	32
	Malnutrition	3	3
Perception of Illness	Very high	0	0
	High	15	15

	Moderate	85	85
	Low	0	0
	Very low	0	0
Total		100	100

Table 1 shows that out of 100 respondents, the majority were male, 61 (61%) respondents, and 39 (39%) female respondents at the Lung Polyclinic of Respira Hospital Yogyakarta in 2024. The number of respondents based on gender shows that COPD sufferers are dominated by men. Based on age group, it is known that the majority are aged 55-65 years, 39 (39%) respondents, and 66-74 years, 29 (29%) respondents, while there is 1 (1%) respondent aged 18 years. The increase in the prevalence of COPD in the age group over 60 years is related to the process of degeneration of the respiratory system. Based on Spirituality Well-Being, it was found that out of 100 respondents, there were 75 (75%) respondents in the high spiritual well-being category and 25 (25%) respondents in the moderate spiritual well-being category. Several previous studies categorized spiritual well-being into low (SWBS score = 20-40), moderate (SWBS score = 41-99), and high (SWBS score = 100-120). Based on these categories, the results of this study indicate that the spiritual well-being of COPD patients at the Respira Lung Hospital Yogyakarta is at a high level.

Based on healthy status, it shows that out of 100 respondents, 63 (63%) respondents showed moderate results, followed by 16 (16%) respondents with good results, 15 (15%) respondents with bad results, and 6 (6%) respondents with very good results on the CAT questionnaire to measure health status.

Based on nutritional status, it was found that there were 65 (65%) respondents with normal nutritional status, 32 (32%) respondents who were at risk of malnutrition, and 3 (3%) respondents who experienced malnutrition or poor nutrition.

Based on perception of illness, it can be seen that the majority have a moderate perception of illness, as many as 85 (85%) respondents, while a small portion have a high perception of illness, as many as 15 (15%) respondents at the Yogyakarta Respira Lung Hospital.

Bivariate Test

Bivariate tests were conducted to see the relationship between the variables Spirituality, Well-Being, Health Status, and Nutritional Status on Illness Perception in COPD. The results shown as the table below :

Table 2. Bivariate Test Results

Variabel	p-value
Spirituality Well-Being	0.257
Healthy Status	0.72
Nutritional Status	0.28

DISCUSSIONS

The majority of respondents were male. The results of this study are in line with Astriani's (2020) study involving 30 COPD respondents at Buleleng District Hospital, which showed that the majority (73.3%) of respondents with COPD were male (Astriani et al 2020). The results of studies in 28 countries from 1990 to 2004 showed that the prevalence of COPD sufferers was higher in men compared to

women and higher in those aged ≥ 40 years compared to those aged < 40 years (GOLD, 2020b). In theory, one of the factors causing COPD is gender. Men are more likely to experience COPD, because most men are active smokers. Cigarette smoke will stimulate bronchial inflammation continuously, which can result in decreased ventilation and diffusion, thereby reducing oxygen intake.

Based on age, 78 (78%) respondents were over 55 years old. The results of this study are in accordance with Apriani's (2023) study involving 18 respondents at Al Ihsan Hospital, West Java Province. The results showed that respondents with a diagnosis of COPD were found to be more at the age of >40 years, with the highest prevalence at the age of >65 years at 61% (Apriani et al. 2023). In theory, COPD symptoms rarely appear at a young age, generally after the age of 50 years and above, highest in men aged 55-74 years. This can occur because aging causes changes in the structure of the airways and lung parenchyma that support the occurrence of COPD. This is in accordance with the understanding of COPD, which is the most common lung disease and is often associated with a history of smoking and increasing age.

Spirituality Well-Being

The results of the study showed that 75 (75%) respondents were in the high spiritual well-being category. This study is in line with the study conducted by Wiyahya (2022) involving 71 respondents, the results obtained were 48 (67.6%) respondents with high spiritual well-being, 19 (26.8%) respondents with moderate spiritual well-being, and 4 (5.6%) respondents with low spiritual well-being. Fulfillment of spiritual well-being is recognized to have a positive impact, such as helping patients accept their condition when they are sick and have a more positive outlook on life. Fulfillment of spiritual well-being also gives a person strength in thinking and acting. In addition, it can provide more enthusiasm to live life and establish relationships with God, others, and the surrounding environment. When spiritual well-being is fulfilled, a person tends to find purpose, meaning, strength, and guidance in their life journey. Spiritual well-being is an important factor for patients who undergo routine check-ups. Conversely, the impact of unfulfilled spiritual well-being can cause significant problems, such as anxiety, loss of inspiration, uncertainty, sadness, lack of acceptance of love, and other signs such as restlessness, crying, difficulty sleeping, and feelings of hopelessness. Therefore, attention to the spiritual well-being of COPD patients becomes a crucial aspect in their care.

The results of the study showed that there was no relationship between Spirituality Well-Being with the perception of illness. This shows that the results of the study are not the same as the study by Tumanggor, R., & Dariyo (2021) which explains that every event, incident or experience in the life of a COPD patient can be responded to positively by having spiritual well-being and being well maintained. A good spiritual well-being condition is a strength for COPD patients to be able to face difficult situations, bad experiences, or unwanted events that befall them, so that sufferers still have optimism, self-confidence and hope to obtain a better future life (Tumanggor, R., & Dariyo 2021). Fulfilled spiritual well-being will have a positive impact on patients in changing a person's behavior in responding to illness and tending to find purpose, meaning, strength, and guidance in their life journey.

Spiritual well-being is part of spirituality that represents an individual's perception of life and the comfort of faith in God. Patients with COPD make spirituality an important resource when facing life situations. Spirituality plays an important role in overcoming illness, so that it can improve a person's quality of life. By looking at the values and beliefs held by each patient, spiritual health can provide a deeper meaning for patients to become better individuals (Hudiyawati et al, 2024).

Fulfillment of spiritual well-being can make someone accept their condition when they are sick and have a better outlook on life. Fulfillment of spiritual well-being gives a person the strength to think and

act. Fulfillment of spiritual well-being also gives a person more enthusiasm in living life and establishing relationships with God, other people, and the environment. When spiritual well-being is fulfilled, a person will find purpose, meaning, strength, and guidance in their life journey (Hudiyawati et al, 2024).

In some situations, patients need a long time to achieve spiritual well-being. Although there is no definite information regarding the time required to achieve a high level of spiritual well-being, in crisis conditions such as being diagnosed with a chronic, terminal, or life-threatening illness, a person tends to draw closer to God and try to find meaning in the illness they are suffering from. In this condition, religious beliefs and practices, such as praying or performing worship at a mosque or church, become tools to achieve spiritual well-being (Mailani et al, 2024). Nurses are expected to continue to provide spiritual care to help patients maintain high spiritual well-being. High spiritual well-being can improve positive aspects of physical and emotional well-being. Spiritual care can be done through therapeutic communication practices, active listening, providing empathy, and helping patients express their spiritual dimensions.

Based on the calculation of the research results, the highest score obtained was the statement of the respondent's belief regarding God's love and concern for the respondent's life. The total score of this statement was 533. On average, respondents answered by agreeing and believing that God always loves and cares about the respondent's life, especially with the illness that the respondent is currently suffering from. The researcher analyzed that respondents could feel interpersonal support both with other people and God. Support from other people and God is very important for someone who has a chronic illness. With support and encouragement, it can encourage them to continue living and recover from their illness.

The result of the research calculation that got the second highest score was the statement of the respondent's belief regarding a meaningful personal relationship between the respondent and God. The total score of this statement was 523. On average, respondents answered by agreeing and strongly believing that the respondent had a meaningful personal relationship with God. The researcher has analyzed that respondents feel a meaningful relationship with God through prayer, which then contributes to the emergence of hope and strength in dealing with their illness. The increase in spiritual well-being occurs because respondents believe that they have a deep personal relationship with God. This finding is in line with what was expressed by Yustisia et al. (2023) who stated that chronic illness can affect a person's relationship with God, involving aspects of faith and life expectancy. People with chronic illnesses often feel different from others, so this can affect their spiritual relationship. The results of the research calculation that got the second lowest score were the statement Closeness to God makes me not feel lonely. The total score for this statement was 493. On average, respondents agree and quite agree that closeness to God makes them not feel lonely. Respondents who believe and obey God cause them not to feel lonely, lose certainty, lose inspiration, or tend to be nervous, anxious, or sad, which extends to despair. Closeness to God makes a person not feel lonely and can lead a person to have very good self-acceptance of their illness and not blame God for their condition but rather consider what happened to them as a gift from God.

Healthy Status

The results of the study showed that 63 (63%) respondents had moderate health status. The results above are in line with the research of Dalimunthe and Arbaningsih (2020) on 30 respondents which showed moderate results for 22 (73.3%) respondents. The results of this study are in line with research

from Dalimunthe and Arbaningsih (2020) with the results that 48 (90.6%) respondents were in moderate health status.

The results of processing each CAT questionnaire question that got the highest score first were questions about shortness of breath when climbing stairs, with a total score of 238. COPD patients tend to have shortness of breath during activities, especially those that require excess energy, such as climbing stairs or walking on uphill roads, because there is airway obstruction, which causes expiratory airflow to decrease; air is trapped in the alveoli, causing air trapping; the lungs get bigger and reduce lung elastic recoil, which ultimately causes shortness of breath during activities (Qalbiyah, S., & Khairani 2022). The second-highest score on the CAT questionnaire was the question about chest pressure, with a total score of 237. Chest heaviness is defined as increased effort to breathe due to the patient's inability to achieve normal air caused by respiratory obstruction, resulting in the lungs easily collapsing and a decrease in peak expiratory flow, which will have an impact on chest tightness or a feeling of heaviness in the chest (Asyrofy et al, 2021).

The results of the bivariate analysis showed that there was no relationship between health status and the perception of COPD patients with a p-value of 0.72 ($p > 0.05$). Good health status will change a person's behavior to be good by always maintaining their own health. The results of previous studies stated that health status is said to be good if the use of health services is carried out actively and health monitoring is carried out well (Kurniawati and Santoso 2018) while health status is said to be bad if the use of health services is not active and health monitoring is not carried out well. Therefore, a person's perception of illness is not directly due to having a good health status but can also be caused by a person's good quality of life, so they will have a perception of themselves as a healthy human being.

The results of the study also showed that the patient always coughed (total score 222). One of the signs and symptoms of COPD is a productive cough, which usually occurs in the morning due to an increase in the amount of thick mucus (sputum), which causes ciliary function to be disrupted, making it difficult to clear mucus (sputum) in the airways. Sputum is a mucus secretion produced by the lungs, bronchi, and trachea (Agustin et al, 2023) The lowest score in this study was on the question regarding concerns about leaving the house due to lung conditions, with a total score of 129. Patients with COPD experience worse psychological function and greater psychological distress. Worry and depression are important problems in COPD patients that have a negative impact on mortality, exacerbation rates, and quality of life (Miravitlles and Ribera 2017). These concerns are influenced by family support/involvement in encouraging and caring for patients (Hasanah et al, 2023).

Nutritional Status

Respondents with malnutrition and risk of malnutrition amounted to 35 (35%). In theory, according to (Sudargo et al. 2021) malnutrition that occurs in COPD sufferers is caused by factors such as daily meal frequency, type of protein intake, vegetable or fruit consumption, fluid intake, and eating habits. Malnutrition that occurs in COPD sufferers is partly caused by an imbalance between the energy entering the body and the energy used. In the body of COPD sufferers, there will be an increase in energy. The increase in energy used is triggered by several factors, such as increased effort in breathing and systemic inflammatory reactions (Soemarwoto et al. 2019).

The results of the study also showed that nutritional status had no relationship with the perception of COPD patients, with a p-value of 0.28 ($p > 0.05$). As we know, malnutrition often occurs in patients with respiratory system disorders. If the nutritional condition is not good (lacking/poor), the body's immune reaction will decrease, which means the body's ability to defend itself against infection attacks also decreases. Malnutrition that occurs in the body of COPD sufferers, one of which is an increase in

energy needs. Increased effort in breathing and a systemic inflammatory reaction process are triggers for increased energy in the body of COPD patients (Soemarwoto et al. 2019). Nutritional status refers to a condition that describes a person's level of nutritional adequacy, which is an important indicator in assessing individual health. This affects the quality of life and potential of human resources, because good nutritional status supports optimal growth, development, and productivity. Conversely, lack or excess of nutrition can cause health problems that affect the overall quality of life. Therefore, nutritional status is a crucial factor in determining a person's well-being and its impact on the social and economic development of the community. Nutritional status assessment includes measuring nutritional intake and can affect dietary intake to decrease.

Based on the calculation of the research results, it was found that the first lowest value was the question about whether respondents consumed protein intake such as dairy products (milk, cheese, and yogurt) per day, nuts, eggs per week, or meat, fish, or poultry every day. The total score for this question is 36. The average respondent consumes protein intake from nuts and eggs per week, which is 53 (53%) out of 100 (100%) respondents. Researchers analyzed that protein is important for COPD patients. Protein functions to build and maintain body tissue. Other functions of protein as a former of essential body bonds include hormones, enzymes, and antibodies, as well as transporting nutrients and regulating water or fluid balance. If the source of carbohydrate energy in food is insufficient for the body, then protein is used to meet energy needs. So if dietary carbohydrates are sufficient, protein will be used as a building substance. Protein produces antibodies to fight infection. If COPD patients lose protein intake, it can reduce nutritional status due to the reduced ability of the lungs to fight infection.

A high-protein diet is one way that can be used to meet the protein needs of the bodies of COPD patients. Examples of foods that can be used for a high-protein diet are nuts, peas, and processed bean products such as tempeh and tofu. In addition, foods such as meat, fish, chicken, eggs, and dairy products such as milk, cheese, and yogurt are also examples of high-protein diets for COPD patients. If the nutritional intake of COPD patients is sufficient, then there is no risk of weight loss that will result in malnutrition. A good and nutritious diet is important for someone with COPD to support the lungs while working. Adequate nutrition in the body of COPD patients is needed to provide energy when breathing (Collins et al. 2019).

Based on research using the MNA questionnaire, the results of the research calculation that had the lowest value were questions about whether respondents took more than 3 prescription drugs per day, with a total score of 56. On average, respondents did not take more than 3 prescription drugs per day, namely 56 (56%) out of 100 (100%) respondents. Most of them only use suction devices for shortness of breath. Some COPD drugs can affect the nutritional needs of COPD sufferers because they remove too much potassium from the body. One of the drugs that is often given to COPD patients is a diuretic (Vozoris et al. 2018). This is due to various reasons, such as pulmonary edema, pulmonary hypertension, cor pulmonale, and systemic hypertension. In theory, diuretic drugs can improve lung health in COPD patients through several mechanisms. Diuretics can reduce the occurrence of pulmonary hypertension and cor pulmonale by reducing preload to the heart and can reduce the occurrence of pulmonary edema (Vozoris, et al., 2018). However, the use of diuretic drugs can also cause several problems, such as removing too much potassium from the body. In addition, The use of potassium-sparing diuretic drugs can cause hypokalemia, which can potentially cause respiratory muscle weakness and acute respiratory failure.

The results of the MUAC calculation have a low value of 72. Protein intake affects LILA in COPD patients. Protein functions to build and maintain body tissue. Nutritional status greatly affects the growth and development of body organs;poor nutritional status will result in organ function not

functioning properly. So that the physiological and anatomical development of the respiratory tract will affect the strength and mass of the respiratory muscles to pump oxygen throughout the body not optimally, control the respiratory rate, and body immunity. In COPD patients, breathing requires high energy, resulting in a lack of protein and calories, which results in decreased nutritional status (Puspasari 2019). Energy needs increase because the work of respiratory mucus increases due to chronic hypercapnic hypoxia, which causes hypermetabolism. Malnutrition is related to the degree of decreased lung function and changes.

Illness Perception

Most of the respondents (85%) have a moderate perception of illness. This study is in accordance with Retnowati (2022) involving 83 respondents at the Community Lung Health Center (BKPM) in the Pati Region, which showed that respondents' perceptions were high regarding self-control, treatment control, and emotionality towards their illness (Retnowati 2022). In theory, perception is influenced by the concept created by patients regarding their illness, namely, understanding their illness. High perception of illness and understanding will make respondents undergo regular care and treatment. The results of the calculations in this study obtained the item with the highest first value, namely that respondents understood that the treatment they were undergoing could control COPD. The total score for this question was 420. On average, respondents felt confident with the treatment they were undergoing to control their lung disease. The treatment carried out by respondents is an influencing factor in managing the success of treatment with the aim of improving health, reducing symptoms, maintaining decreased lung function, preventing exacerbations, and reducing mortality. Untreated COPD symptoms can worsen over time. The worsening condition makes it difficult for respondents to carry out daily activities and is limited (Sari et al. 2021).

Based on the results of this study, the second-highest score is the question about respondents having lung disease for the rest of their lives. The total score for this question is 419. As many as 83.8% of respondents disagree with this statement because respondents feel confident that their COPD can be cured with routine treatment. While, in theory, COPD is a chronic disease that cannot be completely cured (Puspasari 2019).

The results of the study also showed that 84% of respondents stated that there was a support system that could help the patient's condition. Respondents stated that the support system came from family and closest friends. The role of the family has a very large impact on providing support for clients undergoing treatment and care, which usually requires months of treatment, so if no one provides support either physically or psychologically, the client cannot undergo treatment to completion (Damayanti et al, 2023) . The form of support provided by the family is psychosocial support. Psychosocial support is related to the importance of social context in dealing with psychosocial problems faced by the individual. The main social support comes from the family, because family support plays an important role in the lives of sufferers who are struggling to recover, think ahead, and make their lives more meaningful. Family psychosocial support has an effect on health and well-being that functions simultaneously. This is proven by Vihandayani's research (2019) that there is a significant influence between family psychosocial support and the quality of life of patients (Wiratmo et al, 2023).

Based on the results of the study, it was also found that 55% of respondents felt worried about their illness. Worry in COPD patients can increase the work of the parasympathetic nervous system, causing systemic effects such as physical limitations, decreased lung function, and increased risk of exacerbations (Tselebis et al. 2016). Emphasizes that anxiety management is important in COPD patients. Anxiety management is in line with the management of the underlying disease. Anxiety in

COPD is related to low arterial oxygen pressure (PaO2), especially at PaO2 values of 60-80 mmHg. COPD patients with hypoxemia will activate peripheral sympathetic nerves. COPD patients experience feelings of inability to breathe and inhale enough, causing panic that will make patients try to breathe harder and faster (Mizarti et al. 2019).

The limitation of the study is in the measurement of nutritional status. Ideally, the nutritional status is also evaluated by the results of a nutritional panel laboratory that measured micronutrient levels of minerals such as Zn, Se, Mn, Cu, Fe, and Co in the blood. This study implies the importance of more in-depth assessment to measure the independent variables and the involvement of families as research subjects.

CONCLUSION

This study showed that there is no relationship between spiritual well-being and perception of illness, no relationship between health status and perception of illness, and also no relationship between nutritional status and perception of illness in COPD patients. The perception of pain in COPD patients can be influenced by variables other than the independent variables studied.

RECOMMENDATION

This study gives recommendations to improve family support in caring for COPD patients, providing a diet to meet the nutritional needs of COPD patients, the need for peer groups among fellow COPD patients to improve spiritual well-being, health status, and nutritional status, and improve the perception of illness in COPD patients.

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AUTHOR CONTRIBUTION

Author 1 contributed to the proposal preparation, research permit, ethical testing, data collection, data presentation, and discussion. Author 2 contributed to data presentation, discussion, and writing references. Author 3 contributed to data processing.

ETHICAL APPROVAL AND CONSENT

This research has been tested ethically based on the Ethical Clearance number: 01/KEPK/I/2024 from the Yogyakarta Respira Lung Hospital and has obtained a research permit with a reply letter number 500.10.3.1/10. Informed consent was obtained from all individual participants included in the study.

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CONFLICT OF INTEREST

The authors hereby declare that there's no conflict of interest in this study, either to any institutions or individuals

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are not publicly available due to privacy or ethical restrictions.

PROTOCOL REGISTRATION

This study was not registered.

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