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Research Article

The relationship of smoking with the quality of life on chronic obstructive pulmonary disease patients at Dr. Reksodiwiryo Hospital, Padang

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ABSTRACT

Chronic obstructive pulmonary disease (COPD) is a lung disease with the limitation of the airway, which is not completely reversible and is progressive. One of the risk factors of this disease is exposure to cigarette smoke for a long time. The purpose of this research is to know the relationship of smoking with the quality of life of chronic obstructive pulmonary disease patients at Dr. Reksodiwiryo Padang Hospital. This cross-sectional research has been implemented in February-May 2019 and involving 35 research subjects that meet inclusion and exclusion criteria. In this study, data was obtained that 97.1% of male gender research subjects, aged 60-69 years, 37.1%, 45.7% had moderate smoking status, poor quality of life 54.3% and there was a relationship with quality of life in Dr. Reksodiwiryo Padang Hospital (P-value < 0.05). In this research can be concluded that there is a smoking relationship with the quality of life patients of chronic abortive pulmonary disease patients in Dr. Reksodiwiryo Hospital, Padang.



INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is a lung disease that has the limitation of the airway that is not completely reversible and is progressively caused by chronic inflammation due to exposure to particles or toxic gases for a long time. This disease has a characteristic of the limited flow of incoming air and can generally be prevented and hospitalized. (Perhimpunan Dokter Paru Indonesia et al., 2015). The World Health Organization (WHO) predicts 64 million people suffering from COPD and predicting COPD will be the third-largest cause of death in 2030 (WHO, 2014). In 2006, the number of moderate to severe COPD sufferers in the Asia Pacific had a 6.3% prevalence rate. In Indonesia, the prevalence of PPOK amounted to 3.7% of the population with the most regions in East Nusa Tenggara (10.0%) (Badan Penelitian dan Pengembangan Kesehatan, 2013). This figure can increase with the number of smokers because 90% of COPD patients are smokers or former smokers (Oemiati, 2013).

West Sumatera Province was ranked 23rd by the number of PPOK sufferers in Indonesia, with a prevalence of 3.0% (Badan Penelitian dan Pengembangan Kesehatan, 2013). Based on the number of visits in the hospital Dr. Reksodiwiryono Padang has a number of sufferers PPOK quite a lot, based on the initial survey of research obtained the number of patients who visited the hospital in the Lung clinic Dr. Reksodiwiryono Padang on June to November 2018 as much as 1642 people with average monthly visits is 274 people.

The main problem and the most frequent reason that causes the COPD sufferer to seek treatment is the shortness of breath suffered that is persistent and progressive (Jones, Watz, Wouters, & Cazzola, 2016). The typical overview of COPD is the presence of very various airway obstruction, ranging

from asymptomatic, mild to severe symptoms. This phenomenon leads to limitations in the daily activity of the sufferer, depending on the severity of the breathless (Arne et al., 2009). As a result of shortness of breath, patients with COPD tend to avoid physical activity and daily activities, thereby causing immobilization, patient relationships with decreased social activity and will eventually affect the quality of Life sufferer (Zamzam, Azab, El Wahsh, Ragab, & Allam, 2012).

The severity of airway obstruction influences the process of deterioration in the quality of life in COPD patients. Factors contributing to the enhancement of COPD include low socioeconomic status, genetics, age, asthma, chronic bronchitis, infections, and sex. Gender is very influential in patients with COPD. In the case of the incidence of the death of COPD, more males than females. The most influential main factors are the increasing symptoms and exposure to cigarette particles. People who smoke have a high chance of emerging respiratory symptoms, pulmonary function abnormalities, decreased FEV1, and increased mortality rates than in people who do not smoke (Salawati, 2016).

The relationship between the cigarettes with COPD shows the dose-response relationship, which means smoking many cigarettes every day and longer; the risk of disease caused will be greater. The dose-response link can be assessed in the Brigman index, i.e., the amount of cigarette consumption per day multiplied smoking pages in years (Hasni & Warlem, 2019; Nathan & Scobell, 2012). Measurement of quality of life is important in COPD patients because this disease causes progressive damage to the lung function (assessed in VEP1) whose manifestations are congested, and ultimately causes a worsening of conditions in the quality Health that impacts social life and psychic sufferer that overall affects the quality of life. Another reason is the importance of such



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measurements because the quality of life also determines the measure of the success of therapy in COPD patients (Zamzam et al., 2012).

One of the measuring instruments used to view the quality of life of COPD patients using Saint George's Respiratory Questionnaire for COPD (SGRQ-C). It contains questions about symptoms, activities, and effects of COPD disease (Weatherall et al., 2009). Based on the explanation above, researchers are interested in researching to know the relationship of smoking with the quality of life of chronic obstructive pulmonary disease patients at Dr. Reksodiwiry Hospital, Padang.

METHODS

This research was conducted after obtaining permission from the committee of Ethics of Medical Faculty, Universitas Baiturrahmah, with letter number 036/etik-fkunbrah/03/04/2019. Cross-sectional research aims to analyze the smoking relationship with the quality of life of

COPD patients at Dr. Reksodiwiry Padang Hospital using the SGRQ-C questionnaire. This research has been conducted in February – May 2019 by involving 35 people of research subjects recruited by consecutive sampling methods after fulfilling the criteria of inclusion and exclusion. The inclusion criteria of this research were patients who diagnosed with COPD by a lung specialist, were undergoing treatment on an outpatient basis, has a history of smoking, and willing to pursue consent. Research exclusion criteria were patients in acute exacerbation within one month. Categorical Data will be presented in the form of frequencies and percentages. Numeric Data will be presented on average and standard deviation. Analysis of the smoking status relationship and the quality of life of COPD patients conducted with the chi-square test (χ^2). Statistic significance is specified if P is < 0.05 .

Table 1. Demographic and clinical characteristics Data for research subjects

Characteristics	<i>n</i> (%)
Sex:	
Male	34(97.1)
Female	1(2.9)
Age:	
40-49 y.o	3 (8.6)
50-59 y.o	8 (22.9)
60-69 y.o	13 (37.1)
>69 y.o	11 (31.4)
Smoking Status:	
Mild	12(34.3)
Medium	16(45.7)
Heavy	7 (20,0)
Quality of Life:	
Good	16(45.7)
Poor	19(54.3)
Total	35(100)



Table 2. Relationship Status of smoking with the quality of life of COPD patients who have outpatient in the lung clinic Dr. Reksodiwiry Hospital, Padang

Smoking Status	Quality of Life		Total n (%)	P-value
	Good n (%)	Poor n (%)		
Mild	10 (83.3)	2 (16.67)	12 (34.3)	0.005
Medium	4 (25.0)	12 (75,0)	16 (45.7)	
Heavy	2 (28.57)	5 (71.43)	7 (20.0)	
Total	16 (45.71)	19 (54.29)	35 (100)	

In table 2 obtained respondents' data that have a poor quality of life in respondents who have a moderate and severe smoking status of 75% and 71.43%. Test result statistic (Chi-square) obtained value $P = 0.005$ ($P < 0.05$), It can be concluded that there is a smoking relationship with the quality of life of COPD patients who undergo outpatient in the lung clinic of Dr. Reksodiwiry Hospital, Padang.

DISCUSSION

The research was obtained from 35 respondents, as many as (97.1%) Male gender in COPD patients who undergo outpatient in the lung clinic of Dr. Reksodiwiry Hospital, Padang. The results of this research in line with previous research conducted by Muthmainnah in 2015 in patients COPD stable in poly lung Rsud Arifin Achmad Riau Province acquired results (80.28%) Patients with male gender and also the research of Lisa in 2013 was also obtained as many results (87.5%) Respondents were men (Lisa, Saad, & Suyanto, 2013; Muthmainnah, 2015).

Smoking is the most significant risk factor of COPD. Men are more smoking than women, so the number of COPD events is more common in men than women. Data from SUSENAS (*Survei Sosial Ekonomi Nasional*) In Indonesia shows that 64% of the population of Indonesians whose male sex is a smoker and only 4.5% of female smokers

in 2014 (Statistics Indonesia, 2015). Not all smokers will develop into COPD, but as much as 20-25% of smokers will risk suffering COPD (Tanni, Pelegrino, Angeleli, Correa, & Godoy, 2010).

Males have a higher smoking prevalence compared to women. This phenomenon is considered to trigger high cases of severe COPD weight in males because smoking can cause the magnification of the mucosa and hyperplasia of goblet cells in the respiratory tract. (Salvi, 2014). This result is also following the results of research conducted by Sidabutar DKK in RSUP H. Adam Malik Medan in 2012 that the majority of COPD patients were males of 86.4%. The research done by Nugraha in 2014 in RSUP Dr. Ario Wirawan Selatiga from a total of 40 PPOK patients gets the full number of 40 people (100%) Male sex (Nugraha, 2013; Sidabutar, Rasmaliah, & Hiswani, 2012).

The research was obtained from 35 respondents, as many as (37.1%) Aged 60-69 years in COPD patients who undergo outpatient in the lung clinic, Dr. Reksodiwiry Hospital, Padang. The results of this study supported the previous research conducted by Octaria in 2010 at Dr. Moewardi Surakarta HOSPITAL The majority of COPD patients were > years 60 years by 62.9% and also research conducted by Lisa in 2013 at RS. Ahmad Muchtar Riau also obtained the result that 36.3% of respondents are at the age of 61-70 years (Lisa et al., 2013;



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Prabaningtyas, 2010).

The risk factors for COPD are increased at the age of 50 years and above. Where the cardiorespiratory system at the age of 50 years will suffer from decreased endurance. This decline occurs because the lungs, heart, and blood vessels begin to decline its function. Lung function has decreased due to the elasticity of the lung tissue, and the chest wall is increasingly reduced to breathing. As a result of the damage to the lung tissue, there is a small bronchial obstruction that has undergone closure or obstruction of the early expiratory phase, the air is easy to enter into the alveoli, and there is air buildup (Incalzi, Scarlata, Pennazza, Santonico, & Pedone, 2014).

This study obtained results from 35 respondents, as many as 45.7% have moderate smoking status in COPD patients who have outpatient in the lung clinic, Dr. Reksodiwiryo Hospital, Padang. The results of this study supported the previous research conducted by the 2013 Nugraha also obtained the results as many as 50% of the respondents were moderate smokers and the research of Octaria P in the year 2010 stating that the tendency of patients with COPD has History of smoking weight of 73.10% (Nugraha, 2013; Prabaningtyas, 2010).

The behavior of smoking in some respondents had already begun when they were small, and the number of cigarettes they consumed was there that up to two to three packs per day, it increased when they entered the workforce. Environmental factors can induce Increasing consumption of cigarettes (Maritz & Mutemwa, 2012).

The World Health Organization (WHO) mentioned that 215 billion cigarettes in consumption in Indonesia annually. Indonesia ranks fifth among countries with the highest levels of tobacco consumption in the world. The more cigarettes the cigarette is sucked in, and the longer the time of becoming a smoker,

and the greater the risk can be COPD (WHO, 2015). The risk for COPD is dependent on its smoking dose, such as the age of the person starting to smoke, the number of cigarettes smoked per day and how long the person is smoking. Components in cigarette smoke can cause damage to the respiratory tract. The Komonen does damage the cilia so that the longer it can tighten the infection. Meanwhile, mucus production is increasing, and this condition is very conducive to germs growth. If the condition persists, inflammation and respiratory tract narrowing, and the decrease in elasticity will occur. These smoking habits can increase the risk of fatigue in the Salura breath, such as narrowing in the case associated with COPD (de Oliveira, 2016; Tanni et al., 2010)

In research obtained results from 35 respondents, as much as (54.3%) Have a poor quality of life in COPD patients who undergo outpatient in the lung clinic of Dr. Reksodiwiryo Hospital Padang. The results of this research in line with the previous research conducted by Mutmainnah in 2015 in patients COPD stable in poly lung RSUD Arifin Achmad Riau Province acquired results (61.97%) Respondents with a good quality of life (Muthmainnah, 2015). This research shows that more than 50% of respondents have a good quality of life. This result may be due to the progressiveness of COPD disease. COPD is also chronic and irreversible. COPD patients must obtain continuous and frequent involvement of COPD patients with acute exacerbation of the disease so that all of these conditions can reduce the quality of patient life (Zamzam et al., 2012).

One of the things that affect a person's quality of life is characteristic. One's characteristics can affect the pattern and quality of one's life. The characteristic can be seen from several points of view; for example, the first gender in the study shows that patients with COPD are more in men. This can result from a greater



smoking prevalence in males than females. Other factors can also be because of the male task as the head of the family that causes it to work inside and outside of the home that often contacts with COPD risk factors, such as farmers, mine workers, and others. In research conducted by Mutmainnah year 2015 that there are gender differences in men and women in the relationship of quality of life. Where men show a poorer quality of life than women (Muthmainnah, 2015). Quality of life can also be influenced by the age factor. Aged years have decreased from their body function and often have disabilities in conducting activities based on their body condition. This is due to many patients who are elderly COPD suffering from other degenerative chronic diseases, to reduce the function of his body that affects the quality of his life (Incalzi et al., 2014).

This study obtained data that subjects having a moderate and heavy smoking status had a poor quality of life of 75% and 71.43%. Statistic test results (CHI-square) obtained the value $P = 0.005$ ($P < 0.05$), then it can be concluded that there is a smoking relationship with the quality of life of COPD patients who undergo outpatient in the lung clinic of Dr. Reksodiwiryo Hospital, Padang. The relationship is due to the distribution of respondents to this study because most of them are smokers. Generally seen, cigarettes can cause respiratory damage where cigarette smoke has thousands of free radicals and irritant substances that interfere with health. The irritant material goes into the respiratory tract next, sticking to the cilia that are always slimy. The irritant material is also able to burn cilia, so that gradually occurs buildup of irritant material that can cause infection. Meanwhile, mucus production is increasing, and this condition is very conducive to germs growth. If the condition persists, inflammation and respiratory tract narrowing

and decrease in elasticity. The small intensity and timing of exposure to irritant materials in cigarette smoke will affect the condition of the respiratory tract. The greater the intensity, dose, and time of exposure, it will accelerate the occurrence of damage or abnormalities in the respiratory tract. In other words, the habit of smoking can increase the risk of respiratory tract abnormalities, such as narrowing, which in this case is associated with the incidence of COPD (de Oliveira, 2016; Maritz & Mutemwa, 2012).

CONCLUSION

Based on the gender the most men were 34 people (97.1%) And by the most age group at the age of 60-69, which is as much as 13 people (37,1%). Based on the smoking status, the most were in the moderate smoking status of 16 people (45.7%). Based on the most quality of life, it has a poor quality of life of 19 people (54.3%). There is a smoking relationship with the quality of life of COPD patients who undergo outpatient in the lung clinic, Dr. Reksodiwiryo Padang (p -value = 0.005).

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