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Analysis of the Differences in the Quality of Life of Pulmonary TB and Diabetes Mellitus Patients

Zulfi Wirman Hadi[1], Sastrawan[1], Sismulyanto[1]

[1]*Master's Study Program, Health Administration, Qamarul Huda Badaruddin Bagu University, Central Lombok*

**Corresponding Author: Zulfi Wirman Hadi*
E-mail: zulfiwhadi@gmail.com

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Abstract

The low quality of life of pulmonary TB sufferers is in physical, psychological and social aspects, while diabetes mellitus sufferers show a better quality of life. Social stigma, limited social support, and stress due to complex illnesses and treatments are also problems that affect patients' mental and emotional conditions. This study used a comparative design to compare the quality of life of individuals with TB and DM at the Meninting Community Health Center UPT. Data collection in July 2024 with a cross-sectional design. The findings of this research are that there is a significant difference in the quality of life between pulmonary TB and diabetes mellitus (DM) sufferers in the Meninting Community Health Center UPT Working Area, West Lombok Regency. DM sufferers tend to have a better quality of life in physical, psychological, social and environmental health indicators compared to pulmonary TB sufferers. This can be caused by factors such as social support, physical abilities, and living environment. This study shows the need for more intensive attention to pulmonary TB sufferers in improving the quality of life, especially in social and environmental aspects, in order to improve welfare conditions.

Introduction

Quality of life is an individual's perception of their position in life, in the cultural context, the value system in which they exist and their relationship to life goals, expectations, standards, and other related things. Problems that include quality of life are very broad and complex, including physical health problems, psychological status, level of freedom, social relationships and the environment in which they live. Quality of life has several aspects including physical health, psychological well-being, level of independence, social relationships, relationship with the environment, and spiritual condition, which can be measured using the World Health Organization Quality of Life Bref version (WHOQoL-BREF) (Jacob & Sandjaya, 2018). WHO has tried to create a measuring instrument to measure the quality of human life, known as the World Health Organization Quality of Life 100 (WHOQOL-100) and its short version, namely the World Health Organization Quality of Life-BREF (WHOQOL-BREF). This instrument tries to measure the quality of human life from several domains such as physical, psychological, social relationships and the environment. This instrument has been used widely, especially to assess the quality of life of people with certain diseases (Wulandari & Mufdlilah, 2020; Hasse et al., 2025; Vinnikov et al., 2025).

According to WHO, there are four domains that are used as parameters to determine the quality of life, namely the health, psychological, social relations and environmental domains. Physical health can affect an individual's ability to carry out activities. The psychological domain is

related to an individual's mental state. Mental state refers to whether or not an individual is able to adapt to various developmental demands according to his or her abilities. Social relationships are relationships between two or more individuals in which the behavior of these individuals will mutually influence, change or improve the behavior of other individuals (Siregar, 2022; Gerards et al., 2021). The environment is the place where an individual lives, including the conditions, the availability of a place to live to carry out all life activities, including the facilities and infrastructure that can support life (Nursalam, 2017). Tuberculosis (TB) is an infectious disease that usually attacks the lungs, although it can affect any organ in the body. TB infection develops when bacteria enter through droplets in the air. TB can be fatal, but in many cases, TB can be prevented and treated. A person can become infected with TB after inhaling Mycobacterium tuberculosis (M. tuberculosis). When TB affects the lungs, it becomes highly contagious, but a person will usually only become ill after close contact with someone who has pulmonary TB (Duri et al., 2023; Long et al., 2022; Patil et al., 2023).

Diabetes is a serious chronic disease that occurs when the pancreas does not produce enough insulin (a hormone that regulates blood sugar or glucose), or when the body cannot effectively use the insulin it produces. Diabetes is a public health problem which is one of the non-communicable diseases that is a priority for action by world leaders (Gassner et al., 2022; Jailobaeva et al., 2021). The number of cases and prevalence of diabetes has continued to increase over the last few decades. This disease is also the main cause of blindness, heart disease and kidney failure (Purnomo, 2023; Kalantar-Zadeh et al., 2021; Nangaku et al., 2023; Jankowski et al., 2021). Pulmonary Tuberculosis (TB) and Diabetes Mellitus (DM) are two health problems that are quite large epidemiologically and have a large impact globally because they are both chronic and interrelated diseases. Pulmonary tuberculosis will not heal well in uncontrolled diabetes.

Pulmonary TB in DM sufferers has different characteristics, so it is often undiagnosed and therapy is difficult considering the interaction of TB drugs and oral antidiabetic drugs (Boadu et al., 2024; Munir et al., 2024; Cáceres et al., 2022; Van Crevel et al., 2018). Many studies of pulmonary TB in DM sufferers have been carried out, but there are still problems with diagnosis, therapy and prognosis. In preventing disease, the family plays a very important role (Continuing Medical Education, 2020; Long et al., 2021; Ziarati et al., 2022; Pequegnat & Szapocnik, 2000). Diabetes mellitus sufferers will experience physiological disorders in the lungs such as obstacles in the process of fighting infection by the immune system, so that the spread of infection in patients becomes faster (Novita et al., 2022; Hadi et al., 2025; Nugrahalia & Anggraeni, 2021). The condition of high blood sugar in diabetes mellitus sufferers is a good environment for bacteria to grow, including Mycobacterium tuberculosis. This is the main cause of tuberculosis and diabetes mellitus occurring together (Mihardja et al., 2014; Abbas et al., 2022).

Tuberculosis (TB) occurs in every part of the world. In 2019, the largest number of new TB cases occurred in the Southeast Asia region, with 44% of new cases, followed by the Africa region, with 25% of new cases and the West Pacific with 18%. In 2019, 87% of new TB cases occurred in 30 countries with a high TB burden. Eight countries accounted for two-thirds of new TB cases, namely India, Indonesia, China, the Philippines, Pakistan, Nigeria, Bangladesh and South Africa. As many as 1.4 million people died from TB in 2019 (including 208,000 people with HIV). Worldwide, TB is one of the top 10 causes of death and the leading cause of a single infectious agent. In 2019, an estimated 10 million people were affected by TB worldwide. 5.6 million men, 3.2 million women and 1.2 million children. TB is present in all countries and age groups. But TB can be cured and prevented (WHO, 2020). Pulmonary tuberculosis (TB) and diabetes mellitus (DM) are two chronic diseases that have a significant impact on the quality of life of sufferers. If left untreated, tuberculosis causes progressive tissue damage and ultimately death. Pulmonary TB, which is caused by Mycobacterium tuberculosis,

is still a major health problem in Indonesia, including in the NTB region and the prevalence of pulmonary TB in this region continues to increase every year. In West Nusa Tenggara Province, the number of pulmonary TB patients from 2020 – 2021 has increased by 60 cases each year (Jupriadi et al., 2023).

Based on a preliminary study conducted by researchers at the UPT Puskesmas Meninting in January 2023, data was obtained that the number of new BTA positive TB sufferers was 54 people in 2022, and there was an increase of 30 new BTA positive TB sufferers in 2023. Meanwhile for Diabetes Mellitus sufferers 175 cases were found in 2023. Overall, trends in TB and DM disease rates indicate a significant public health challenge. Understanding how these two diseases affect a patient's quality of life can help in identifying their specific needs. Quality of life problems in tuberculosis (TB) and diabetes mellitus (DM) patients can be diverse and complex. Both TB and DM can cause patients to experience difficulty in carrying out physical activities, which results in decreased quality of life. TB patients often experience stigma that makes them isolated from the social environment (Redwood et al., 2022; Huq et al., 2022; DeSanto et al., 2023; Rapoport et al., 2022; Pradipta et al., 2021).

Likewise with DM patients who may feel neglected. Many patients experience mental health problems due to prolonged stress caused by complicated illnesses and treatments as well as limitations in social support which can worsen the patient's mental and emotional condition resulting in patients experiencing a decline in their perceived quality of life, which can contribute to feelings of hopelessness and loss. hope. Understanding this problem is very important for designing interventions that can improve the quality of life of TB and DM patients holistically, both from a physical, emotional, social and economic perspective. This research can help in understanding the long-term impact of TB and DM on quality of life, and how this can be overcome. Thus, research on the quality of life of TB and DM patients is not only relevant for improving individual well-being, but also for the development of a better health system as a whole.

This study aims to analyze differences in the quality of life of pulmonary TB and DM sufferers at the Meninting Community Health Center, West Lombok, using the WHOQOL-BREF questionnaire which covers physical, psychological, social and environmental aspects. It is hoped that the results of this research will provide useful information for the preparation of better health policies and intervention programs for pulmonary TB and DM sufferers in this region.

Methods

Using both comparative analytical design and a cross-sectional approach this study compared the quality of life experiences between pulmonary tuberculosis (TB) and diabetes mellitus (DM) patients in the service area of the Meninting Community Health Center UPT within West Lombok Regency. The research design utilized a comparative method to establish significant quality of life variations between pulmonary tuberculosis patients and patients with diabetes mellitus. The cross-sectional nature of data collection occurred in July 2024 to capture representative quality of life data at that particular time. This research design successfully measures comprehensive illness impacts in community health environments by comparing different disease patterns.

All patients treated at Meninting Community Health Center who received either pulmonary TB or DM diagnosis formed the study population. The health center retrieved the population frame through their medical records and registration documentation. A specific group of 191 participants obtained their selection based on probability sampling where each eligible patient maintained equal probabilities to join the study. The researchers computed the sample size using Slovin formula which stands as a popular method to determine measurements when both population size and desired error precision are known. A total of 69 respondents with

tuberculosis and 122 patients with diabetes mellitus were needed for the study to achieve 95% confidence level with 5% margin of error.

Microsoft Excel's random number generator provided simple random sampling functions that both achieved random selection and minimized bias in participant choice. The methodology selected for selection purposes boosted objectivity and achieved demographic representativeness between key categories including age structure and gender compositions and education background. Internal validity of the study increased through implementing inclusion and exclusion criteria. Individuals qualifying for this research needed to possess pulmonary tuberculosis or diabetes mellitus along with an age of twelve years or older and ability to communicate through speech or writing and active participation through informed consent. Patients meeting any of these three exclusion criteria were not included: (1) presence of cancer or advanced heart disease that could impact health outcomes on their own, or (2) acute psychological disorders at the time of data collection or (3) physical inability caused by severe illness or cognitive impairment.

The World Health Organization Quality of Life-BREF (WHOQOL-BREF) instrument served as the tool for measuring health-related quality of life in the data collection process because it holds globally validated status. The WHOQOL-BREF features twenty-six questions across four core domains that cover physical health aspects from pain through to energy and sleep as well as work ability and psychological well-being aspects with body image and thinking ability and negative feelings and self-esteem measurements along with social relationships domains about personal relationship satisfaction and social support and environmental factors encompassing health service access and safety and physical environment conditions. The measurement tool implements a five-point Likert scale to assess personal observations as well as individual perceptions. Researchers selected the WHOQOL-BREF instrument because it detects changes caused by chronic diseases and maintains reliability across cultures and enables sufficient group comparison.

Evaluating data quality required trained enumerators who conducted face-to-face interviews with every participant to ensure both consistency and accuracy. Standardized training sessions taught the enumerators how to handle ethical matters and confidentiality standards as well as communication skills. Those participants who were literate and wanted to self-administer the questions received written questionnaires while staff helped when needed. A private space inside the health center became the data collection area to protect participant comfort together with their confidentiality rights.

The gathered data required entry into an analysis software program (such as SPSS) for processing. Example 1: The initial part of data analysis began with univariate analysis to produce descriptions of participant demographics and observe frequency distributions throughout the WHOQOL-BREF instrument domains. The research enabled a comprehension of TB and DM patients' scoring patterns in each of the four quality-of-life domains.

The analysis performed Levene's Test for Equality of Variances to verify the needed assumptions for inferential statistical tests for each quality-of-life domain. Researchers used Levene's Test to evaluate variances between TB and DM patients which enables performance of parametric t-tests. The domain p-values exceeded 0.05 during the Levene's Test thus confirming the condition of equal variance. The researchers executed Independent Samples t-tests to evaluate differences in TB and DM patient mean scores throughout the four domains of the WHOQOL-BREF. The researchers relied on the t-test to determine whether differences between mean scores held meaningful statistical value. The research adopted a p-value of 0.05 or less to determine statistical significance levels. The t-tests confirmed whether significant differences observed between physical, psychological and social, environmental quality of life measures emerged as meaningful statistical findings.

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Result and Discussion

The study evaluated the life quality effects of pulmonary tuberculosis (TB) and diabetes mellitus (DM) through WHOQOL-BREF questionnaire assessment of physical and psychological and social and environmental domains. The evaluation examined both quantifiable distinctions between patient well-being and their complete disease-based life experiences between the two populations. TB causes patients to face treatment difficulties along with social stigma but DM patients benefit from managed care despite its chronicity and disability risk. The same healthcare facility provides the setting for this study to validate how public health services need customization since it reveals variations in patients' lived experiences when they have TB or DM.

The results begin with descriptive statistics showing the distribution of participants according to their ages with gender and education status information presented next. The analysis proceeds to evaluate domain-based quality of life scores and establishes performance assessments between subjects with TB infection and those managing DM. The statistical significance of observed differences becomes clear through bivariate inferential tests including both Levene's Test and Independent Samples t-test as well as univariate summary reports. The methodological structure allows researchers to understand both types of differences as well as their relevance to medical practice and policy development.

Further details on statistical findings come from univariate and bivariate analytical approaches which follow below. The tables together with related narrative sections demonstrate that Tuberculosis patients differ from patients with Diabetes Mellitus regarding their health perception and social and emotional responses along with their living space preferences. This research design provides a detailed understanding of how the two chronic conditions affect patients differently while outlining potential health intervention applications.

Univariate Analysis Results

Distribution of Respondents Based on Age of TB and DM Patients

Table 1. Respondent Characteristics

No	Variable	TB patient		DM patient	
		Amount	%	Amount	%
1	**Gender**				
	Man	42	60,87	38	31,15
	Woman	27	39,13	84	68,85
2	**Age**				
	12-16 years (early teens)	5	7,25	0	0,00
	17-25 years (late teens)	11	15,94	1	0,82
	26-35 years (early adulthood)	16	23,19	2	1,64
	36-45 years (late adulthood)	16	23,19	12	9,84
	46-55 years (early elderly)	11	15,94	47	38,52
	56-65 years (late elderly)	7	10,14	46	37,70
	>65 years (seniors)	3	4,35	14	11,48
3	**Education**				
	Elementary school	3	4,35	11	9,02
	Junior High School	9	13,04	26	21,31
	Senior High School	52	75,36	72	59,02
	College	5	7,25	13	10,66

Table 1 shows significant differences between TB and DM patients in the distribution of gender, age and education variables. TB patients are dominated by men, while DM patients are

dominated by women. TB patients have a more even age distribution, while DM patients tend to be more in the elderly age group. The majority of TB patients have high school/vocational education, while DM patients are dominated by high school/vocational school education. This information is important for more effective management and intervention for TB and DM patients.

Univariate Analysis Results

Patient Quality of Life for Physical Health Indicators

Table 2. Patient Quality of Life for Physical Health Indicators

Quality of Life	TB patient		DM patient	
	Frequency	(%)	Frequency	(%)
Good	29	42,0	107	87,7
Bad	40	58,0	15	12,3
Total	**69**	**100,0**	**122**	**100,0**

Based on Table 2, there is a significant difference in quality of life between TB and DM patients. The majority of TB patients have a poor quality of life with a percentage of 58.0%, while the majority of DM patients have a good quality of life with a percentage of 87.7%. This comparison shows a fairly clear difference in quality of life between the two groups of patients, with DM patients tending to have a better quality of life than TB patients.

Patient Quality of Life for Psychological Health Indicators

Table 3. Patient Quality of Life for Psychological Health Indicators

Quality of Life	TB patient		DM patient	
	Frequency	(%)	Frequency	(%)
Good	50	72,5	112	91,8
Bad	19	27,5	10	8,2
Total	**69**	**100,0**	**122**	**100,0**

Based on Table 3, it can be seen that the majority of TB patients have a good quality of life with a percentage of 72.5%, while the majority of DM patients also have a good quality of life with a percentage of 91.8%. This comparison shows that DM patients tend to have a better quality of life than TB patients. Although there are some TB patients who have a good quality of life, the percentage of DM patients with a good quality of life is much higher.

Patient Quality of Life for Social Indicators

Table 4. Patient Quality of Life for Social Indicators

Quality of Life	TB patient		DM patient	
	Frequency	(%)	Frequency	(%)
Good	19	27,5	105	86,1
Bad	50	72,5	17	13,9
Total	**69**	**100,0**	**122**	**100,0**

Based on Table 4, it can be seen that the majority of TB patients have a poor quality of life with a percentage of 72.5%, while the majority of DM patients have a good quality of life with a percentage of 86.1%. This comparison shows a significant difference in quality of life between TB and DM patients, with DM patients tending to have a better quality of life than TB patients. Although there are some TB patients with good quality of life, the proportion of DM patients with good quality of life is much higher.

Patient Quality of Life for Environmental Indicators

Table 5. Patient Quality of Life for Environmental Indicators

Quality of Life	TB patient		DM patient	
	Frequency	(%)	Frequency	(%)
Good	28	40,6	97	79,5
Bad	41	59,4	25	20,5
Total	**69**	**100,0**	**122**	**100,0**

Based on Table 5, the majority of TB patients have poor quality of life (59.4%), while the majority of DM patients have good quality of life (79.5%). This shows that DM patients tend to have a better quality of life compared to TB patients. This significant difference suggests that DM conditions may have a more positive impact on quality of life compared to TB conditions.

Bivariate Test Results

Table 6. Results of Levene's Test for Equality of Variances

Aspect	Levene's Test for Equality of Variances	t-test for Equality of Means
	F	Sig.
Physical Health	1.85	0.18
Psychic Health	2.22	0.14
Social	1.95	0.16
Environment	1.15	0.25

The Levene's Test results show that the assumption of equality of variance is met for all aspects of health (physical, psychological, social and environmental). This means that the data variance between groups of pulmonary TB and DM sufferers is the same for all aspects tested. This is proven by the significance value (Sig.) which is greater than 0.05 for all aspects, namely 0.18 for Physical Health, 0.14 for Psychological Health, 0.16 for Social, and 0.25 for the Environment. Thus, it can be concluded that the data variations in the two groups are not significantly different.

Table 7. Independent Sample T-Test

Aspect	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
Physical Health	-12.45	189	0.000	-15.3	1.23	-17.73 to -12.87
Psychic Health	-13.56	189	0.000	-14.8	1.09	-16.95 to -12.65
Social	-14.67	189	0.000	-16.4	1.12	-18.60 to -14.20
Environment	-12.34	189	0.000	-13.9	1.13	-16.13 to -11.67

Based on the significance in the table above, for all health aspects tested (physical, psychological, social and environmental), there are significant differences between pulmonary TB and DM sufferers. From the average value, DM sufferers have a higher average in all aspects of health compared to pulmonary TB sufferers. Meanwhile, for equality of variance, the results of Levene's Test show that the variance between the two groups is the same, so the assumption of equality of variance is met.

Quality of Life of Pulmonary TB Sufferers

Univariate analysis shows that the quality of life of TB patients varies in various aspects. In terms of physical health, the majority of TB patients have poor quality of life, which may be

caused by the high need for medical therapy and the impact of the disease on daily activities. This can be seen from low vitality, sociability, and satisfaction with sleep. However, TB patients show satisfaction with their ability to carry out daily activities and work, even though their social skills are low. In contrast, in terms of psychological health, the majority of TB patients have a good quality of life, which may be due to their ability to enjoy life and find meaning in life, even though they suffer from TB. This is reflected in the low level of negative feelings such as loneliness, hopelessness, anxiety and depression.

Even though TB patients have a good quality of life in the psychological aspect, the social aspect shows different results. The majority of TB patients have a poor quality of life in social aspects, which may be caused by dissatisfaction with personal relationships, sexual life, and support from friends. This may be related to the negative stigma attached to TB disease. In terms of the environmental aspect, the majority of TB patients also have a poor quality of life, which may be caused by a low sense of security, limited space to meet their needs, and environmental health. However, TB patients show satisfaction with living conditions and access to health services. Overall, the social aspect is the aspect with the highest percentage of poor quality of life in TB patients, which shows the need for programs that can improve the quality of life of TB patients in this aspect.

Quality of Life for Diabetes Mellitus Sufferers

Based on the analysis of univariate test results on the quality of life of DM patients in terms of physical health, mental health, social, and environmental aspects, it appears that the majority of DM patients exhibit good quality of life. This may be due to the ability of DM patients to carry out daily activities without high dependence on medical assistance, as well as their ability to manage their physical and emotional conditions well. DM respondents also showed a sufficient level of vitality, good social skills, and satisfaction with their ability to work. Furthermore, the mental health aspect of DM patients indicates that the majority of them are able to enjoy life, have meaning in life, and are able to accept their physical appearance well, and rarely experience negative feelings such as loneliness, despair, anxiety, and depression. Socially, DM patients also showed satisfaction with personal relationships and support received from their friends. In terms of the environment, DM patients showed satisfaction with their living conditions, space to meet their needs, access to health services, and transportation services used to access health services.

Although DM patients show good quality of life in various aspects, there are significant differences with TB patients, especially in the environmental aspect. TB patients tend to show poor quality of life in terms of living environment, availability of facilities and infrastructure, and opportunities for fun or recreation. This indicates the need for efforts to improve the quality of life of TB patients in the Working Area of UPT Meninting Public Health Center, West Lombok Regency, especially in the environmental aspect. Therefore, programs that can improve the living environment of TB patients, provide better access to facilities and infrastructure, and increase opportunities for fun or recreation can be an important step in improving the quality of life of TB patients in the area.

Analysis of the Differences in the Quality of Life of Pulmonary TB Sufferers and Diabetes Mellitus Sufferers Based on Four Aspects

Physical Health Aspects

Univariate test results show that more DM sufferers (87.7%) have a good quality of life in terms of physical health compared to TB sufferers (42%). The independent t test also showed a significant difference (p-value < 0.05) between the quality of life of TB and DM sufferers in physical health aspects. The difference in quality of life between the two groups in this aspect is not due to chance, but is statistically significant. This is in accordance with research

conducted by Shariefuddin et al. (2016) which states that there is a difference between the quality of life of DM sufferers and TB sufferers on physical health indicators.

Physical health is a set of qualities possessed or achieved by a person that are related to the ability to perform physical activities. TB disease greatly affects a person's physical health. This condition related to pain and discomfort is a very unpleasant and very individual sensation that cannot be shared with other people (Ita et al., 2020). Physical health indicators include daily activities, dependence on medications and medical assistance, energy and fatigue, mobility, pain and discomfort, sleep and rest, and work capacity (Azuwardi, 2014; Rogers, 2024; Solomon & Manea, 2022; Wojcieszek et al., 2022).

Pulmonary tuberculosis can have a negative impact on the patient's physical health. Patients with pulmonary TB often become very weak due to prolonged chronic illness and impaired nutrition, anorexia, weight loss and malnutrition are common in pulmonary TB patients. The patient's desire to eat is disturbed by fatigue due to severe coughing, swelling of sputum, chest pain and general weakness. Tuberculosis patients will generally experience weakness which will affect their physical activity. Patients who do not adhere to treatment generally complain of unpleasant side effects on the body (Ita et al., 2020; Ruscica et al., 2022; Franzoi et al., 2021).

The physical domain is one of the domains that can cause a person's quality of life to decrease, especially in people who suffer from diabetes mellitus. Diabetes mellitus is a chronic disease that cannot be cured, but can be controlled (Irianto, 2014). People who suffer from diabetes mellitus can have their physical activity hampered due to limited food intake and their physical strength can quickly decline due to age (Umam & Purnama, 2020).

Psychological Health Aspects

Univariate test results show that 91.8% of DM sufferers have a good quality of life, while only 72.5% of TB sufferers have a good quality of life in terms of psychological health indicators. The independent t test showed that there was a significant difference (p-value < 0.05) between the quality of life of TB and DM patients in the psychological health aspect. This shows that the difference in quality of life between the two groups in this aspect is not due to chance, but is statistically significant. This is in accordance with research conducted by Shariefuddin et al. (2016) which states that there is a difference between the quality of life of DM sufferers and TB sufferers on psychological health indicators.

The Psychological Dimension in WHOQOL-Bref is related to the individual's mental state related to the psychological aspect, where an individual can carry out an activity well if the individual is mentally healthy. Psychological well-being includes bodily image and appearance, positive feelings, negative feelings, self-esteem, personal beliefs, thinking, learning, memory and concentration, appearance and physical image (Azuwardi, 2014). Psychological health is a condition where an individual can accept one's strengths and weaknesses as they are, has the ability to adapt to oneself, other people, and the society in which one lives. People with good psychological health can control all factors in their lives so that they can overcome mental chaos resulting from feelings of pressure and things that cause frustration (Ita et al., 2020).

The quality of life in terms of psychological health indicators for TB sufferers is lower than for DM sufferers due to the lack of psychological support from the family. Psychological support is very important in the healing and recovery process for TB sufferers, including care, appreciation, instrumental support, and information related to the disease. This support helps in compliance with taking medication, accompanies treatment, and provides relevant health information for TB sufferers, especially pulmonary TB (Ita et al., 2020).

According to Chaidir's research in 2018, diabetes mellitus is a chronic disease that lasts a long time, requiring adjustments in daily activities. Diabetes mellitus patients who suffer from it for less than 2 years tend not to be ready to live life as diabetes mellitus sufferers and experience a decrease in quality of life (Chaidir et al., 2018).

Social Aspect

The results of the analysis show that DM patients have a better quality of life than TB patients in social aspects. This is evidenced by the higher percentage of DM patients with good quality of life (86.1%) than TB patients (27.5%). The statistical test (t-test) also shows a significant difference (p-value < 0.05) between the two groups on social aspects. This is not in accordance with research conducted by Shariefuddin et al. (2016) which states that there is no difference between the quality of life of DM sufferers and DM-TB sufferers on social indicators.

The social dimension relates to the relationship between two or more individuals where individual behavior will mutually influence, change or improve the behavior of other individuals (Azuwardi, 2014). Social support consists of verbal and nonverbal information or advice, tangible assistance or actions provided by social familiarity and has emotional benefits or behavioral effects for the recipient. Social support is defined as help that individuals receive from other individuals or groups around them, by making the individual who receives social support feel comfortable, loved and appreciated. The emphasis on the concept of social support is perceived support, which has two basic elements, namely the perception that there are a number of other individuals who can be relied on when needed and the degree of satisfaction with existing support (Ita et al., 2020). A phenomenon that is still often encountered in society is that there are still family members who are afraid, especially of being close to someone who is suspected of having TB, so that excessive caution arises, for example isolating the sufferer, being reluctant to talk, if they are close to the sufferer they will immediately cover their nose and so on (Yusnitasari et al., 2015).

The quality of life of TB sufferers tends to be lower than that of DM sufferers in terms of psychological health, possibly due to fear of TB transmission and limited socialization. Social support has an important role in improving the patient's quality of life, as mentioned by Herawati (2013). People with diabetes mellitus, which cannot be cured, need social support to fight the disease and improve their quality of life (Herawati, 2023). Social support from the family also has a positive impact in improving the quality of life of DM patients. The improvement in quality of life in the social relations dimension of DM patients is caused by high levels of social support from the family. Social support plays an important role in the lives of people with DM, helping to improve quality of life (Umam and Purnama, 2020).

Environmental Aspects

Based on the results of univariate tests, more DM sufferers have a good quality of life than TB sufferers on environmental indicators. The independent t test showed a very low p-value (0.00), indicating that there was a statistically significant difference between the quality of life of TB and DM sufferers on environmental indicators. This shows that DM sufferers have environmental conditions that are more supportive of a good quality of life than TB sufferers in terms of the environment. This is in accordance with research conducted by Shariefuddin et al. (2016) which states that there is a difference between the quality of life of DM sufferers and TB sufferers on environmental indicators.

The environment plays an important role in a person's health and quality of life. A good environment can support good health and quality of life, while a bad environment can have a negative impact on health. This is reinforced by the fact that the environmental conditions in which individuals live, including the availability of housing and supporting infrastructure, influence daily life (Ita et al., 2020). A safe and supportive environment will speed up the healing process of sick individuals, while an unhealthy environment can worsen the condition.

Therefore, it is important for the environment where TB sufferers live to meet health standards in order to improve the patient's quality of life (Azuwardi, 2014).

Conclusion

The people who have pulmonary tuberculosis (TB) in the service area of the Meninting Community Health Center UPT, West Lombok Regency display markedly lower quality of life scores than those affected by diabetes mellitus (DM). The quality of life reported by patients with diabetes mellitus surpasses those of patients with tuberculosis based on an examination of physical health and psychological well-being and social relationships and environmental factors. Tuberculosis patients with pulmonary infection showed the most severe deterioration of quality of life in the physical health along with social domain because they faced severe disease symptoms and social discrimination related to tuberculosis. Patients with TB showed moderate satisfaction within psychological and environmental aspects yet their quality of life evaluation indicated significant deficiency against individuals with DM. Patients with diabetes mellitus demonstrated consistently better domain performance across physical and social aspects along with psychological and environmental conditions probably because their condition becomes manageable through appropriate medical treatment. Medical tests demonstrated that these differences were not random because they resulted in significant statistical variation across all four domains between the two groups. The research demonstrates multiple barriers that TB patients require assistance with besides medical treatment by displaying the need to establish interventions which provide comprehensive psychological and environmental assistance.

Suggestion

Based on research that has been carried out, researchers suggest steps to improve the quality of life of TB and DM patients in the Meninting Community Health Center UPT work area, including increasing socialization to reduce stigma and increasing knowledge, improving the quality of services at the Community Health Center, collaboration between professions for holistic care, and improving collaboration with networks around the Community Health Center. These steps aim to provide holistic care, support patient recovery, and increase access to health services for TB and DM sufferers.

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