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Profile of Pulmonary Tuberculosis Treatment at Kaluku Bodoa Health Center, Makassar City, 2023

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Abstract

Global TB Report 2022 recorded more than 700 thousand TB cases. This figure is the highest since TB became a National Priority Program. In Indonesia, the highest number of TB cases is found in the productive age group, especially those aged 45 to 54 years. This study aims to determine the profile of pulmonary tuberculosis treatment at the Kaluku Bodoa Health Center. The research design used is a non-experimental study with data collection conducted retrospectively using medical records, including individual characteristics (age, gender, education, occupation), patient type, type of Directly Observed Treatment (DOT) supervisor, and treatment category. Based on the research conducted at the Kaluku Bodoa Health Center, data showed a total of 201 pulmonary tuberculosis patients. In terms of individual characteristics, there were 44 patients aged 46-55 years, 123 male patients, the majority of whom had a primary education level (97 patients), and most of the patients were working (174 patients). Based on patient type, there were more new patients, totaling 177. All patients had a family DOT supervisor, totaling 201 patients. The treatment category used is category 1 for 197 patients.

Keywords: Tuberculosis, Puskesmas Kaluku Bodoa, Treatment

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1. Introduction

Pulmonary Tuberculosis (TB) is a contagious disease caused by the Mycobacterium tuberculosis bacteria, which is transmitted through saliva droplets when an infected person coughs, sneezes, talks, or spits. It can affect the lungs (pulmonary TB) but can also damage other parts of the body (extrapulmonary TB). Pulmonary TB has a long incubation period and will become chronic with reactivity and fatal consequences if not treated properly. It is more contagious during the incubation period compared to when the disease is already present, potentially infecting 10-15 people per year if left untreated. As many as 50% of patients with this disease cannot be saved if not treated within a 5-year period (Hadifah dkk, 2017).

Based on the Global TB Report of 2022, the number of TB cases was more than 700 thousand cases. This figure is the highest since TB became a national priority program. Tuberculosis (TB) in Indonesia ranks second after India, with 969 thousand cases and 93 thousand deaths per year, equivalent to 11 deaths per hour. In Indonesia, the highest number of TB cases occurs in the productive age group, especially between the ages of 45 to 54 years. This age range is when the majority of people are working. In the National TB Elimination Strategy outlined in Presidential Regulation No. 67 of 2021 on addressing TB in Indonesia, efforts include strengthening commitments, improving access to TB services, optimizing promotional and preventive measures, and utilizing research and technology outcomes (Kemenkes RI, 2020).

Based on Indonesia's health profile, 568,987 tuberculosis cases were detected in 2019. As for the number of tuberculosis cases detected in 2020, the number was 351,936 cases. Emerging TB cases account for almost half (46%) of the total number of TB cases in Indonesia in two densely populated provinces: West Java, East Java, and Central Java. TB data for the year 2022 up to the 4th quarter recorded at P2TB Dinkes Kota Makassar amounted to 5,724 TB cases or 89% achievement of the target from the 6,677 TB burden target set by the Makassar City DPRD, which is a decrease compared to 2021 when 4,109 TB cases were achieved from the 6,685 target (P2TB Dinkes Kota Makassar, 2022).

The high number of tuberculosis patients is caused by various factors, including inadequate healthcare facilities and the lack of patient knowledge about tuberculosis. If patients follow the correct treatment procedures, tuberculosis is a disease that can be treated and cured. The management of tuberculosis with a short-term treatment strategy (DOTS) involves an intensive phase and a continuation phase. The treatment is carried out regularly for 2 months / 8 weeks, and the continuation phase is conducted to eliminate any remaining bacteria, thereby preventing relapse and transmission to others. Typically, the continuation phase is given for 4 months / 16 weeks (Sari dkk, 2022).

Active pulmonary TB treatment uses anti-tuberculosis drug (OAT) guidelines with a treatment duration of 6-8 months. There are three categories for the treatment of

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pulmonary TB: category 1, category 2, category 3. Where the composition of category 1 is OAT isoniazid, rifampicin, pyrazinamide, and ethambutol with a duration of 2 months (2 RHZE) given during the intensive phase of TB treatment. Meanwhile, rifampicin itself is taken for 4-6 months (4H3R3). In the continuation phase, and category 2 uses the OAT guidelines of Isoniazid, Rifampicin, Pyrazinamide, Ethambutol, and Streptomycin for 2 months (2HRZES). In the intensive phase, isoniazid, rifampicin, and ethambutol are given for 4-6 months (5H3R3E3) in the continuation phase, while category 3 also uses the OAT guidelines of isoniazid, rifampicin, pyrazinamide (2HRZ) in the intensive phase for 2 months and isoniazid, rifampicin itself is given for 4-6 months (4H3R3) in the continuation phase. Another treatment is the supplementary category consisting of isoniazid, rifampicin, pyrazinamide, and ethambutol (HRZE) consumed daily for 1 month, given at the end of the intensive phase of pulmonary TB treatment for positive AFB (Syaifiyatul H, 2020).

Puskesmas is one of the health service organizations that conducts public health work and first-level personal hygiene work (Kemenkes RI, 2019). According to the Makassar City Health Office, Puskesmas Kaluku Bodoa is the health center with the highest number of tuberculosis patients in Makassar City in 2023.

2. Research Method

The research used is a non-experimental study with data collection conducted retrospectively using medical record data. This research was conducted in May - June at the Kaluku Bodoa Community Health Center.

Population and Sample

Population

The population in this study consists of all medical records of pulmonary tuberculosis patients at Puskesmas Kaluku Bodoa Makassar, with several characteristics being considered: individual (age, gender, education, occupation), patient type, type of drug supervisor (PMO), and treatment category.

Sample

The sample in this study consists of all medical record data from January to December 2023 diagnosed with pulmonary tuberculosis at Puskesmas Kaluku Bodoa Makassar that meet the inclusion and exclusion criteria.

Research Variables

Research variables include independent and dependent variables. The independent variable in this study is the medical records of pulmonary tuberculosis patients at Puskesmas Kaluku Bodoa Makassar, while the dependent variable is the treatment profile.

Type of Data

The type of data in this study is secondary data, specifically patients diagnosed with pulmonary tuberculosis obtained from medical records at Puskesmas Kaluku Bodoa Makassar.

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Research Instrument

The instrument or tool used in this research is the medical record data of pulmonary tuberculosis patients at the Kaluku Bodoa Health Center in Makassar.

Data Analysis

The data that has been collected, obtained, and presented descriptively.

3. Results And Discussions

a. Result

This is a study on the profile of pulmonary tuberculosis treatment at Puskesmas Kaluku Bodoa Makassar. Puskesmas Kaluku Bodoa is the health center with the highest number of tuberculosis patients in the city of Makassar.

The research is the categorization of data based on the conducted study, including individual characteristics (age, gender, education, occupation), patient type, type of PMO (Medication Supervisor), and treatment categories at the Kaluku Bodoa Health Center in Makassar city during the period from January to December 2023.

Table 3.1
Individual Characteristics (age, gender, education level, occupation)
at Puskesmas Kaluku Bodoa

Characteristic	Total N=201	Percentage % N=100
Age		
0-11	2	1%
12-16	7	4%
17-25	34	17%
26-35	35	17%
36-45	36	18%
46-55	44	22%
56-65	43	21%
Gender		
Male	123	61%
Female	78	39%
Level of Education		
Early	1	0,50%
Base	97	48,26%
Internediate	75	37.31%
High	28	13,93%
Work		
Working	174	87%
Doesn't work	27	13%

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Table 3.2
Types of Pulmonary Tuberculosis Patients Based on
Data from Kaluku Bodoa Health Center, Makassar City

Patient Type	Total N=201	Percentage % N=100
Baru	177	88%
Lama	24	12%
Tidak dievaluasi	0	0%
Total	**201**	**100%**

Table 3.3
Types of Medication Supervisors (PMO) for Pulmonary Tuberculosis
Patients Based on Data from Kaluku Bodoa Health Center, Makassar City

PMO Type	Total N=201	Percentage % N=100
Family	201	100%
Neighbor	0	0%
Friend	0	0%
Health workers	0	0%
Total	**201**	**100%**

Table 3.4
Categories of Pulmonary Tuberculosis Patient Treatment
Based on Data from Puskesmas Kaluku Bodoa, Makassar City

Kategori pengobatan	Jumlah N=201	Presentasi (%) N=100
Kategori 1	196	98%
Kategori 2	1	0%
Kategori 3	0	0%
Anak-anak (0-12 thn)	4	2%
Total	**201**	**100%**

b. Discussion

In Table 3.1, it can be explained that the individual characteristics based on age show that the highest number of patients are those aged 45-55 years (22%). There are more male patients (61%) compared to female patients (39%). Based on education level, the highest number of patients are those with a basic education (48.26%), and the majority are working patients (87%).

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According to Suryo (2018), pulmonary tuberculosis often occurs in men compared to women. Pulmonary tuberculosis tends to be higher in men compared to women. Men have heavy workloads and unhealthy lifestyles such as smoking and alcohol. Women pay more attention to their health compared to men, therefore women are less frequently affected by pulmonary TB. Women report their symptoms more and consult doctors more often because women tend to exhibit more diligent behavior than men (Dewanty et al., 2016).

In general, pulmonary tuberculosis is commonly suffered by individuals with low education levels, including those who are uneducated, have completed elementary school, and junior high school. Murni (2017) mentioned that patients with successful treatment of pulmonary tuberculosis were found to have a primary school education, and some even had no formal education. One of the factors that determines whether the treatment is successful or not is the level of education. A person's level of education will influence their knowledge, including about homes and environments that meet health standards, so with sufficient knowledge, a person will try to adopt clean and healthy living behaviors. Based on research, there is a significant relationship between education level and the quality of life of TB patients. It was also found that poor, moderate, and good quality of life among patients with primary and advanced education is greater than among those with higher education (Abrori & Ahmad, 2017).

Health workers also assign one family member to be the PMO in supervising the patient to ensure they take their medication regularly. Family members and healthcare workers provide full support so that patients with low education can complete their treatment and recover. Therefore, whether the education level is low or high, if supported by the patient's adherence to medication, they have the same opportunity to succeed in their treatment. (Pameswari, 2016) states that the actions or roles of hospital staff during the provision of healthcare services to pulmonary tuberculosis patients are very important in providing information about the importance of taking medication regularly and completely, explaining the correct medication regimen and potential side effects that patients may experience, the staff's willingness to listen to patients' complaints and provide solutions, and the staff's role in providing health education to the patients' families.

Many respondents who successfully underwent treatment were those who worked, including as entrepreneurs, civil servants, farmers, laborers, and private employees. The type of job also carries risks for each individual in daily life. patients with any job and any income have the opportunity to receive good treatment because, in general, TB treatment is included in the national disease control program, and the treatment costs are covered by the government using the BBJS health allowance, so TB patients will succeed in their treatment.

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It is known that out of 201 patients with Pulmonary Tuberculosis at Puskesmas Kaluku Bodoa in the 2023 period, the number of new patients (88%) is higher compared to old patients (12%).

A new patient is a patient who has never taken TB medication before or has taken TB medication for less than 1 month (4 weeks). Many factors contribute to the continued high incidence of new pulmonary TB cases, including the low level of patient knowledge about pulmonary TB, the fact that many patients do not undergo treatment, and also the occurrence of relapses. In the 5th month or more, for new patients, if the sputum examination result is positive, the treatment is declared a failure. Failed treatment must be followed by category 2 treatment or re-treatment from the beginning, and the patient must complete the treatment. For patients undergoing re-treatment, if the sputum examination result is positive and declared a failure, an OAT sensitivity test must be conducted. If the OAT sensitivity test cannot be performed, an explanation about the TB disease must be provided, and the patient must be monitored to ensure compliance with IPC (Infection Prevention and Control) efforts.

The research conducted in Table 3.3 shows that all 201 pulmonary tuberculosis patients at Puskesmas Kaluku Bodoa have family PMOs, with a total of 201 patients (100%). The Ministry of Health (2014) shows that the Medication Supervisor (PMO) is someone close to the patient, such as a family member, friend, neighbor, or healthcare worker, who can supervise the patient to take their medication regularly within 24 hours. A PMO is someone who is valued, respected, and obeyed by the patient, which will make the patient compliant in taking their medication and eventually complete their treatment thoroughly. Other community leaders can become PMOs for TB patients if healthcare workers cannot serve as PMOs, such as PKK members, teachers, or cadres.

Based on the description above, it was found that the Kaluku Bodoa health center in Makassar city appoints family members as PMOs (Drug Ingestion Supervisors) to ensure that patients adhere to their treatment, thereby increasing the likelihood of successful recovery. Family members play an important role in supervising the intake of OAT (Anti-Tuberculosis Drugs) because they live in the same household as the patient and can remind them to take their medication at any time. Although family members are crucial in supervising OAT intake, healthcare workers and neighbors can also collaborate and assist each other in monitoring OAT intake for TB patients, especially those who are far from their families or no longer have any family members. With the presence of PMO, it is hoped that the chain of pulmonary TB transmission can be broken and the increase in pulmonary TB patients can be reduced.

In Table 3.5, of the 201 patients with pulmonary tuberculosis at the Kaluku Bodoa health center during the 2023 period who adhered to the OAT treatment guidelines, it can be seen that the type of OAT used was category 1 with a composition of rifampicin

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(150 mg), isoniazid (75 mg), pyrazinamide (400 mg), ethambutol HCL (275 mg), which was more prevalent (98%) compared to category 2, category 3, and pediatric category.

According to the Indonesian Ministry of Health (2014), the OAT guidelines for pulmonary TB patients include: Category 1: 2RHZE/4RH3 given with the division of RHZ for 2 months and recommended RH for 4 months for new patients, Category 2: 2RHZES/RHZE/5RH3E3 given for 8 months to BTA (+) patients who have previously received treatment. Category 1 patients who fail treatment, if they have not been tested for drug sensitivity or referred to a referral hospital, should be given a combination of Category 2 OAT treatment from the beginning. Category 2 patients whose treatment fails need to be tested for drug sensitivity or referred to a referral hospital; if this is not possible, the patient's adherence to infection control efforts should be monitored.

Based on the OAT category guidelines, category I requires 6 months of treatment and category II requires 8 months of treatment with different medication dosages (Kemenkes RI, 2014). This study found that patients at the Kaluku Bodoa Health Center who used category 1 treatment were more numerous because category 1 treatment requires a shorter treatment duration compared to category 2 treatment. Additionally, since most patients at BBKPM Makassar are children, it can be seen that the majority of treatments are for children.

4. Conclusion

The results of the research on the profile of pulmonary tuberculosis treatment at Puskesmas Kaluku Bodoa Makassar in 2023 can be concluded as follows: based on the research conducted at Puskesmas Kaluku Bodoa, the data showed a total of 201 pulmonary tuberculosis patients. Based on individual characteristics, there were 44 patients aged 46-55 years, 123 male patients, and the majority of patients had a primary education level, totaling 97 patients. Most of the patients were working, with 174 patients. Based on patient type, there were more new patients, totaling 177, compared to old patients. Based on the type of PMO (Directly Observed Treatment), all patient data showed that 201 patients had family PMOs. The treatment category used was category 1 for 197 patients.

5. Compliance with ethical standards

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Disclosure of conflict of interest

This research collaboration is a positive thing for all researchers so that conflicts, problems and others are absolutely no problem for all writers.

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Statement of informed consent

Every action we take as authors is a mutual agreement or consent.

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