

Research Article

Characteristics of Pulmonary Tuberculosis Patients Based on Age, Gender, and Education in the Pondidaha Public Health Center

Abd. Rafid, SriWulan Machmud, Usman, Nurlela, Ramadhan Tosepu*

Department of Magister Public Health, Postgraduate, Halu Oleo University, Indonesia

Abstract.

According to the World Health Organization (WHO), tuberculosis (TB) is a global public health emergency because tuberculosis is widespread and difficult to treat. The researchers in this study tried to segment the tuberculosis sufferers in the Pondidaha Health Center service area based on age, gender, and level of education. Workplace analysis was carried out at the Pondiha Health Center. There were 35 subjects. SPSS was the analysis software used. According to the results of this study, age is not the main risk factor for tuberculosis. There was no relationship between a lower education level and an increased risk of tuberculosis. Gender does not play a significant role in the development of tuberculosis.

Keywords: Age, Education, Gender, Pulmonary Tuberculosis

Corresponding Author:
Ramadhan Tosepu; email:
ramadhan.tosepu@uho.ac.id

Published 26 May 2023

Publishing services provided by
Knowledge E

© Abd. Rafid et al. This article is distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use and redistribution provided that the original author and source are credited.

Selection and Peer-review under the responsibility of the ICASI Conference Committee.

1. Introduction

Tuberculosis (TB) is still a health problem faced by the world community, especially in developing countries. The World Health Organization (WHO) declares Tuberculosis (TB) as a very important and serious public health problem throughout the world. This disease causes a global emergency because most countries in the world have uncontrolled pulmonary tuberculosis. This is due to many patients who are not successfully cured, and the main cause of death caused by infectious diseases [1].

Tuberculosis is still a public health problem causing high morbidity, disability, and death levels, so efforts to control it are needed. This disease is caused by the *Mycobacterium ediculosus* bacteria, with the main symptom being a cough with phlegm for 2 weeks or more. Cough may be followed by additional symptoms, such as phlegm mixed with blood, coughing up blood, shortness of breath, weakness, decreased appetite,

 OPEN ACCESS

decreased body weight, malaise, night sweats without physical activity, and more than one chills fever. WHO itself estimates that every year, there are 9 million new cases of sufferers of ediculosis, and the death rate of ediculosis is 3 million people each year.

Mycobacteria that can be eaten can also cause tuberculosis. Although the lungs are the most common target, other organs, such as the kidneys, spine, and brain, can become infected with the TB bacteria. One of the top 10 causes of death globally, tuberculosis is also the leading cause of death among those living with HIV/AIDS [2].

Pulmonary TB disease is easily transmitted to those who live in crowded housing, lack of sunlight, and poor/stuffy air circulation. However, if there is enough air and circulation, TB germs can only survive for 1-2 hours [3]. Because there are still TB cases, study on TB statistics in the city of Kendari is still important. The Kemaraya Health Center is not immune to this problem either. This year, there have been 38 confirmed instances of periodontitis (BTA+), with 21 males (55.26%) and 17 women (44.74%) affected. There were an additional 42 instances in 2020, with 23 males (54.76%) and 19 women (45.23%) being affected. There will be a total of 33 (33%) fewer cases of BTA (+) pulmonary TB in 2021, with 21 (63%) men and 12 (36%) women affected. Since 2015, the number of tuberculosis cases at the Kemaraya Health Center has ranged from 0 to 0 (with an overall upward trend) 2020 [4].

Because there are still TB cases, study on TB statistics in the city of Kendari is still important. The Kemaraya Health Center is not immune to this problem either. This year, there have been 38 confirmed instances of periodontitis (BTA+), with 21 males (55.26%) and 17 women (44.74%) affected. There were an additional 42 instances in 2020, with 23 males (54.76%) and 19 women (45.23%) being affected. There will be a total of 33 (33%) fewer cases of BTA (+) pulmonary TB in 2021, with 21 (63%) men and 12 (36%) women affected. Since 2015, the number of tuberculosis cases at the Kemaraya Health Center has ranged from 0 to 0 (with an overall upward trend) [4]

Based on the background constructed above, this study aims to identify and analyze the characteristics of pulmonary tuberculosis patients based on age, gender, and education groups in the working area of Pondidaha Public Health Center.

2. Research Methods

This study was analytic research with a case-control study design. This design aimed to determine risk factors or health problems that are closely related to diseases that

occurred in the community. This study was conducted in the working area of Pondidaha Public Health Center in 2020-2021. The respondents were 35 people. The dependent variables in this study were age, education, gender, and contact history, while the independent variable was pulmonary tuberculosis.

3. Results

3.1. The Characteristics of Age Respondents

TABLE 1: The characteristics based on age.

Age	Frequency	Percentage
17-21	3	9
22-27	3	9
28-33	4	11
34-39	3	9
40-45	3	9
46-51	4	11
52-57	6	17
58-63	6	17
64-69	3	9
Total	35	100

Source: TB SO patient data at the Pondidaha Public Health Center in 2022

Table 1 explains that the most dominant age of the respondents is productive age, totaling 12 people with an age range of 52 to 63.

TABLE 2: The characteristics based on education and gender.

Education	Freq.	Perc.	Gender	Freq.	Perc.
Senior High School	4	11	Man	32	91
Bachelor Degree	31	89	Woman	3	9
Total	35	100	Total	35	100

Source: TB SO patient data at the Pondidaha Public Health Center in 2022

Table 2 explains that the most dominant educational level is Bachelor’s Degree, totaling 31 people (89%). Meanwhile, the most dominant gender is male respondents, totaling 32 people (91%).

4. Discussion

4.1. Age and the Incidence of Pulmonary TB

Analyses of age-related data show no correlation between the location of the Pondidaha Health Center's offices and the incidence of tuberculosis in the service area in the coming year (2021).

The results of this study are in line with the findings of [5] and [6], It concluded that individuals aged 15–55 were 1.5 times more likely to suffer from pulmonary TB than those aged 15 or >55, but that there was no correlation between age and the prevalence of TB in this age group.

Contrary to the findings of another study (Dotulong et al., 2015) that found an association between age and the prevalence of pulmonary TB, the results of the current investigation show no such correlation. This is due to the fact that advancing years tend to bring about the kind of behavioral shifts that come with increased levels of physiological and mental maturity. Seventy-five per cent of TB patients are in the prime working years (15-50 years). It is anticipated that an adult with tuberculosis will miss out on three to four months of productive work due to their illness. It reduces yearly household income by 20-30%. They stand to lose nearly 15 years of revenue if they perish from tuberculosis [7].

As a result of having to get out and about more to take care of day-to-day needs and participate in community activities, people in the productive age often come into contact with others who pose different hazards. The likelihood of air pollution due to coughing, sneezing, and loud talking, as well as the number of tuberculosis bacilli in the sputum, all contribute to the spread of this disease. Infants, toddlers, the elderly, and the young are all equally vulnerable to this disease because of its high degree of sensitivity

4.2. Education and the Incidence of Pulmonary TB

Analyses of data collected in the service region of the Pondidaha Public Health Center in 2020-2021 found no correlation between educational attainment and pulmonary TB.

The results of this study are in line with the findings of [8], which found that education did not have a significant effect on pulmonary TB.

The prevalence of tuberculosis varies with a person's educational attainment. Knowledge gained through higher education is superior, particularly in the field of health prevention. Someone with a lot of schooling is more likely to be an active participant in health care since they are actively learning a variety of information that can help them [9].

One's openness to new ideas, new knowledge, and new ideals will all suffer from a lack of education. Accepting and adapting to change becomes less of a challenge for people as they get more education [10].

The more education one receives, the more likely they are to be aware of tuberculosis and its treatment. Every step of the health education process depends on the respondent's educational background. Additionally, these individuals are more likely to gain adequate information about tuberculosis from the many resources already available to them.

4.3. Gender and the Incidence of Pulmonary TB

Analyses showed no statistically significant correlation between sex and pulmonary TB.

The results of this study are in line with the findings of [11], which concluded that there was no correlation between gender and pulmonary TB. In the service region of Pondidaha Public Health Center, TB cases did not differ significantly by age group in 2020–2021.

According to [7], There are nearly 1.5 times as many males diagnosed with BTA+ as females. In every region of Indonesia, males outnumber females as BTA+ sufferers. The gender gap is widest in North Sumatra, where men's rates are two times higher than women's.

Due to the prevalence of smoking among men, tuberculosis is more common in men than in women. Although there is no definite gender bias in risk factors for this illness, males are more likely to be affected due to factors beyond their control, such as their propensity for smoking [12].

4.4. Contact history and the Incidence of Pulmonary TB

The analysis of the data shows that there is a strong correlation between contact history and pulmonary TB.

Children exposed to people with active pulmonary tuberculosis, living in an endemic area, being poor, residing in an unclean environment (poor hygiene and sanitation), and using a shared shelter all increase the likelihood that a child may contract TB (orphanage, prison, or other nursing homes) [12]. Lung infection caused by the bacterium *Mycobacterium tuberculosis*, tuberculosis (TB) can be fatal if left untreated. The spread of tuberculosis (TB) is a major global health concern. The Sustainable Development Goals include tuberculosis prevention as one of its targets (SDGs). In 2020, patients aged 45–54 accounted for 17.3% of the total, while those aged 25–34 accounted for 16.8% and those aged 15–24 accounted for 16.7%. In 2020, just 41.7% of Tuberculosis cases received treatment, down from 46% in 2015 and 52% in 2018. Since 82.7%, there is a pressing need to enhance medical care for tuberculosis [13].

There is no longer a need to worry about tuberculosis eradication efforts. This has led to a decline in the number of reported cases being investigated; with fewer cases being studied, the transmission rate is likely to increase. We can't let this go on any longer. Programs aimed at completely eliminating tuberculosis will need to be restarted by the Ministry of Health in the Republic of Indonesia. No, it's not a piece of cake to accomplish this. Socioeconomic factors such as stigma, a lack of family support, and difficulty in accessing health facilities owing to cost, distance, and transportation all pose challenges to TB elimination aims [14]

5. Conclusion

In the service area of the Pondidaha Public Health Center in 2020-2021, the researchers found that age did not have a significant role in the development of pulmonary TB. In the service region of Pondidaha Public Health Center, higher levels of education will not increase the likelihood of contracting pulmonary tuberculosis in 2020–2021. In the service area of Pondidaha Public Health Center, gender in 2020-2021 is not a significant risk factor for the occurrence of pulmonary TB. In the Pondidaha Public Health Center catchment region in 2020-2021, contact history will be a major risk factor for the development of pulmonary tuberculosis.

References

- [1] Oktavia S, Mutahar R, Destriatania S. Analisis Faktor Risiko Kejadian TB Paru di Wilayah Kerja Puskesmas Kertapati Palembang. *Jurnal Ilmu Kesehatan Masyarakat*. 2017;7(2).
- [2] Febriyanti R. Faktor-Faktor Yang Berhubungan Dengan Kejadian Penyakit Tuberkulosis (TB) Paru di Wilayah Kerja Puskesmas Serang Kota Tahun 2019. *Jurnal Ilmiah Kesehatan Masyarakat: Media Komunikasi Komunitas Kesehatan Masyarakat*. 2020;12(1):1–10.
- [3] Lestyaningsih T. HUBUNGAN LINGKUNGAN FISIK RUMAH DENGAN KEJADIAN TUBERCULOSIS PARU. *Ruwa Jurai: Jurnal Kesehatan Lingkungan*. 2021;14(2):78–84.
- [4] Manurung IF, Ruliati LP, Ndun HJ, Baun AH, Lele YK, Wahyuni CU. GOD SERVANTS'KNOWLEDGE AND STIGMA OF TUBERCULOSIS IN KUPANG INDONESIA. *Public Health Of Indonesia*. 2018;4(3):116–20.
- [5] Korua ES, Kapantow NH, Kawatu P. Hubungan Antara Umur, Jenis Kelamin, Dan Kepadatan Hunian Dengan Kejadian TB Paru Pada Pasien Rawat Jalan Di Rumah Sakit Umum Daerah Noongan. *Manado: Fakultas Kesehatan Masyarakat Universitas Sam Ratulangi*; 2014.
- [6] Ridwan H, Rosita Y, Sahfitri A. Faktor Risiko yang Berhubungan dengan Kejadian Tuberkulosis di RSK Paru Palembang Periode Januari-Desember Syifa'MEDIKA: *Jurnal Kedokteran dan Kesehatan*. 2012;2(2). <https://doi.org/10.32502/sm.v2i2.1439>.
- [7] Dotulong J, Sapulete MR, Kandou GD. Hubungan faktor risiko umur, jenis kelamin dan kepadatan hunian dengan kejadian penyakit TB Paru di Desa Wori Kecamatan Wori. *Jurnal Kedokteran Komunitas dan Tropik*. 2015;3(2).
- [8] Hakim A, Putri PM. PENGARUH LATAR BELAKANG PENDIDIKAN PASIEN TERHADAP KETERATURAN PENGOBATAN TB PARU DI PUSKESMAS WANGON I BANYUMAS. *Psycho Idea*. 2015;13(2).
- [9] Muhammad EY. Hubungan Tingkat Pendidikan Terhadap Kejadian Tuberkulosis Paru. *Jurnal Ilmiah Kesehatan Sandi Husada*. 2019;8(2):288–91.
- [10] Mursudarinah M, Sari DN. HUBUNGAN TINGKAT PENDIDIKAN DAN FASE PENGOBATAN TUBERKULOSIS PARU DENGAN STATUS GIZI PENDERITA TUBERKULOSIS PARU DI BALAI BESAR KESEHATAN PARU MASYARAKAT SURAKARTA. *SMIKNAS*. 2019;248-257.

- [11] Lestari NP, Dedy MA, Artawan IM, Buntoro IF. PERBEDAAN USIA DAN JENIS KELAMIN TERHADAP KETUNTASAN PENGOBATAN TB PARU DI PUSKESMAS DI KOTA KUPANG [CMJ]. *Cendana Medical Journal*. 2022;10(1):24–31.
- [12] Asyary A. Childhood tuberculosis: a neglected paradigm in developing countries. *Public Heal Indones*. 2017;3(1):7–10.
- [13] Tosepu R, Effendy DS. Tuberculosis Epidemiology and Medical Treatment Efforts in Indonesia in the Year 2020. *KnE Life Sciences*; 2022. pp. 7–13–7–13.
- [14] Effendy DS. Elimination of tuberculosis in the COVID-19 pandemic era in Indonesia. *Public Health of Indonesia*. 2022;8(1):24–6.