

## ORIGINAL ARTICLE

# LEVEL OF ATTITUDE, MEDICATION ADHERENCE, AND QUALITY OF LIFE AMONG PATIENTS WITH TUBERCULOSIS

I Kadek Dwi Swarjana<sup>\*1</sup>, Tintin Sukartini<sup>2</sup>, Makhfudli<sup>3</sup>

1, 2, 3 Faculty of Nursing, Airlangga University, Indonesian

\* Correspondence: i.kadek.dwi.swarjana-2017@fkip.unair.ac.id

## ABSTRACT

Tuberculosis (TB) is a global health concern worldwide. The study aimed to describe the level of attitude, medication adherence, and quality of life among patients with tuberculosis. The cross-sectional study design was applied in this study. Seventy samples were selected by using purposive sampling technique. The findings showed that most of the patients were a moderate level of attitude in medication adherence (45.7%). Regarding compliance with obedient, 61.4% of patients were non-compliance in medication. The majority of patients (64.3%) were a moderate level of quality of life; only 14.3% of patients have a high level of quality of life. The support and effective strategy need to improve the attitudes, adherence, and quality of life of patients with pulmonary TB.

**Keywords** Pulmonary TB, attitude, compliance, quality of life, Supervision of medicine drug

International Journal of Nursing and Health Services (IJNHS), December 2019, Volume 2, Issue 4; Page 334-339  
Received: 17 June 2019; Revised: 01 July 2019; Accepted: 10 July 2019  
DOI 10.35654/ijnhs.v2i4.141

## Introduction

Tuberculosis is a global health problem and mostly occurred in developing countries, including Indonesia (1). In Indonesia, nearly 3 million people die each year due to pulmonary TB (2). Factors associated with treatment failure of TB sue to patient's disobedient behavior towards treatment, and lack of discipline (3).

Global TB Report 2018 reported that Indonesia was the third-highest TB burden in the world after India and China. The recent data showed new cases of tuberculosis were 842,000 cases per year (4-5). According to a report from the West Sulawesi Health Office, an increasing number of TB were documented from 1,607 cases in 2015 to be 2,330 cases in 2016.

The government of Indonesia has implemented TB control programs over the past few decades (6). One of the factors treatment failure among pulmonary TB patients due to lack of supervision from supervisory (7). Roles of supervisory to remind patients in taking medicine, to facilitate patients in medication-taking, to support patients, and deliver patients to treatment at the Public Health Center (8).

Knowledge and attitudes are also essential to increase medication adherence. Lack of knowledge and lack of supervision could impact on a misunderstanding of carrying out the drug (9). A study showed that one of the causes of dropping out of treatment among pulmonary TB patients was lack of supervision (10). Adequate knowledge of medication, and a good attitude on medication adherence, as well as the intention of the supervisor, improved health status(11).

Even though knowledge and attitude are essential factors to quality of life among patients, a limited study conducted to describe the level of mentality, medication adherence, and quality of life among patients with tuberculosis. The study has benefits to improve healthcare services for tuberculosis patients.

## Method

The cross-sectional study design was applied in this study. Seventy samples were recruited by using a purposive sampling technique. Data collection was carried out in the working area of the Topoyo Public Health Center, Central Mamuju Regency, which was the region with the highest TB cases. The inclusion criteria of samples were aged more than 17 years old, has been diagnosed as tuberculosis by the physician. Demographic data questionnaires and questionnaires to measure attitude, medication compliance and quality of life were used to assess the information from patients.

The research ethics committee approved this study of the Faculty of Nursing, Airlangga University. All respondents received information about the purpose of the study, the benefits, and the consequences of the study.

## Result

### Demography data of patients

Table 1 showed the data demography of patients with tuberculosis. The findings showed that more than half of the patients were a man (52.9), and 47.1% of patients were women. Most of the patients were between 17 to 34 years old (40%). Regarding the education level, the majority of patients have primary education. Details explanation were summarized in table 1.

Table 1 Frequency of demographic data among patients with pulmonary TB

Variable	Frequency (N)	Presence (%)
<b>Gender</b>		
Man	37	52.9
Women	33	47.1
<b>Age</b>		
17-34	28	40.0
35-49	16	22.9
50-79	26	37.1
<b>Education</b>		
Basic Education	49	70.0
Middle Education	11	15.7
Higher Education	10	14.3
<b>Work</b>		
Work	48	68.6
Does Not Work	22	31.4

### Level of attitude, medication adherence and quality of life among patients with tuberculosis

Table 2 described the level of mentality, medication adherence, and quality of life among patients with tuberculosis. The findings showed that most of the patients were a moderate level of attitude in medication adherence (45.7%). Regarding compliance with obedient, 61.4% of patients were non-compliance in medication. The majority of patients, 64.3% of patients, where a moderate level of quality of life; only 14.3% of

patients have a high level of quality of life. Details explanation were summarized in table 2.

Table 2 Distribution of characteristics of attitudes, adherence, and quality of life for patients with pulmonary TB

Variable	Frequency (N)	Presence (%)
<b>Attitude</b>		
Low	18	25.7
moderate	32	45.7
High	20	28.6
<b>Obedience</b>		
Obey	43	61.4
Not Obey	27	38.6
<b>Quality of life</b>		
Low	15	21.4
Moderate	45	64.3
High	10	14.3

## Discussion

Based on the table above shows that the attitude of respondents in the excellent category as many as 20 respondents (28.6%), enough 32 respondents (45.7%) and less 18 respondents (25.7%). The previous study showed that the importance of supervision of improvement patient's attitude in completing TB treatment (9). Attitudes can be formed from the existence of social interactions experienced by individuals. This social interaction is more than just social contact and the relationship between individuals as members of social groups. Still, in social interactions, mutual reciprocity occurs, which also influences the behavior patterns of each individual as a member of society. Furthermore, this social interaction can include relationships between individuals with the environment in determining this intact attitude, knowledge, thoughts, beliefs, and emotions play an essential role (10).

Attitudes can also be influenced by motivation and reinforcement given to patients undergoing treatment programs so that immediate improvements can also be affected by social interactions with health workers, families, or people close to patients, including fellow pulmonary TB patients (11). Compliance distribution with the obedient category was 43 respondents (61.4%), not obedient 27 respondents (38.6%). In line with (12), there was a significant relationship between the role of supervisors taking medication and medication adherence for pulmonary TB patients. Factors that influence individuals and families in treatment are the level of education, knowledge, attitudes, employment, income, distance of health services, and supervisory support for taking drugs (13).

Lack of knowledge and attitude is anything that can have a positive effect on improving patient compliance with taking TB (14). The level of compliance of each person can also be influenced by the self-acceptance of individuals related to something that feels needed (15). Non-adherence to treatment can affect the quality of life of TB patients (16). The basis of compliance has aspects that can not be separated from an attitude that is formed from within each individual. In an approach requires an acceptable process for each individual. TAn awareness needs to improve positive

behavior to achieve a better goal. Showed that non-compliance in TB patients was influenced by a lack of knowledge about TB treatment (17).

A previous study explained that health education can increase the level of individual confidence in carrying out self-care processes and improve the quality of life of these individuals (18). It was found that the majority of the quality of life distribution was enough as many as 45 respondents (64.3%), less than 15 respondents (21.4%), and good only ten respondents (14.3%). Also, employment status can be related to the quality of life for both men and women. The quality of life of someone who has a job and is directly proportional to income tends to have a better quality of life (19). Consistent with the previous study confirmed educational, economic, cultural values and lifestyle, social values and family, technology, spiritual background were associated with health (20,21). Increasing the quality of life in aspects of physical health in this case, the researcher assumes that the respondent's educational background influences the knowledge, attitudes, and actions of Tuberculosis patients (22,23). The treatment process that tends to take a long time also requires supervision so that it does not stop in the middle; this supervision is carried out by the Drug Control Supervisor. Excellent quality of life tends to be more optimal in carrying out the process treatment compared to adequate or poor quality of life.

## **Conclusions**

Attitudes, medication adherence, and the quality of life of patients with pulmonary TB still need to be improved. So that the behavior of the supervisor swallows drugs better. Families can enhance their ability to take action to monitor patients taking medication regularly. Interact with each other and the behavior of their health status towards a better one.

## **Recommendations**

The supervisor should have the ability to monitor medication taking regularly. The motivation, counseling, and support should also be delivered to improve adherence to medication. Drug-taking supervisors are required to interact with each other, share experiences and information with fellow drug-taking supervisors regarding the treatment process that has been carried out so that it can indirectly improve behavior towards a better one.

## **Acknowledgments**

The author would like to thank Prof. Dr. Nursalam M.Nurs (Hons) as Dean of the Faculty of Nursing, Airlangga University, Surabaya. Thank you also to Dr. I Ketut Sudiarsa, M.Kes as Head of the Central Mamuju District Health Office, Nur Yadin, S.Kep as Head of the Disease Control and Prevention Division of Central Mamuju District Health Office and staff. Unlimited thanks to the respondents who participated in this study.

## **References**

1. Trisnowati H, Universitas U, Yogyakarta R. Peran Pengawas Menelan Obat ( PMO ) Dalam Upaya Penyembuhan Penderita Tb Paru ( Studi Pada Puskesmas Besimaka, Kecamatan Malaka, Nusa Tenggara Timur ). 2017.
2. Sulochana S, Subhashini V, Srinivasan c. Pulmonary tuberculosis - a prospective analysis of hematological changes. 2018;11(4):2-5.

3. Rudianto E, Muhari A, Harada K, Matsutomi H, Siry HY, Sadtopo E, Kongko W. Ecosystem-based tsunami disaster risk reduction in Indonesian Coastal Areas. In *Tsunamis and earthquakes in coastal environments 2016* (pp. 31-46).
4. World Health Organization (2018). *Global Tuberculosis Report 2018*. WHO Library Cataloging in Publication Data. France. rating community-and other civil society
5. *InfoDATIN* (2018). *Tuberculosis InfoDATIN 2018 Kementerian Kesehatan Republik Indonesia*, 6
6. Harminsyah A. Peran pengawas menelan obat (PMO) Kasus drop out TB Paru BTA Positif.
7. Putri JA. Hubungan Pengetahuan dan Tingkat Pendidikan PMO ( Pengawas Minum Obat ) Terhadap Kepatuhan Minum Obat Antituberculosis Pasien TB Paru The Relationship of Knowledge and Education Level PMO ( Supervisory Drink Drugs ) Compliance Against Drinking Antitubercular. 2015;4:81-4.
8. Alfid tri. A. Pengaruh Peer Group Support terhadap Peningkatan Pengetahuan, Sikap, Kepatuhan minumobat Dan Kualitas Hidup Klien Tuberkulosis Paru. *IOSR J Econ Finance*. 2016;3(1):56.
9. Ndwiga JM, Kikuvu G, Omolo JO. Factors influencing knowledge on completion of treatment among TB patients under directly observed treatment strategy in selected health facilities in Embu County, Kenya. *Pan Afr Med J*. 2016;25:1-8.
10. Galluzzi L, Bravo-San Pedro JM, Vitale I, Aaronson SA, Abrams JM, Adam D, Alnemri ES, Altucci L, Andrews D, Annicchiarico-Petruzzelli M, Baehrecke EH. Essential versus accessory aspects of cell death: recommendations of the NCCD 2015. *Cell death and differentiation*. 2015;22(1):58.
11. Gebremedhin SA, Kisasi MD, Feng Z, Liu Q, Luba TR, Tang S. Knowledge, attitude, and associated factors towards tuberculosis in Lesotho: a population-based study. *BMC Infect Dis*. 2019;19(1):1-10
12. Kurniasih E. Hubungan Antara peran Ibu balita dalam pemberian makanan bergizi dengan status gizi pada balita. *Warta bhakti husada Mulia*. 2016 Nov 26;3.
13. Alotaibi B, Id YY, Mushi A, Maashi F, Thomas A, Mohamed G, et al. Tuberculosis knowledge, attitude, and practice among healthcare workers during the 2016 Hajj. 2019;1-15.
14. Ferraz dos Anjos K, Silva de Oliveira Boery RN, Cruz Santos V, Nagib Boery E, de Oliveira Santa Rosa D. Characteristics of the Elderly and Their Family Caregivers. *J Nurs UFPE / Rev Enferm UFPE*. 2017;11(3):1145-55.
15. Ruru, Y., Matasik, M., Oktavian, A., Senyorita, R., Mirino, Y., Tarigan, L. H., ... Alisjahbana, B., 2018. Factors associated with non-adherence during tuberculosis treatment among patients treated with DOTS strategy in Jayapura, Papua Province, Indonesia. *Global Health Action*, 11(1).  
<https://doi.org/10.1080/16549716.2018.1510592>
16. Mohammed S, Nagla S, Morten S, Asma E, Arja A. Illness perceptions and quality of life among tuberculosis patients in Gezira, Sudan. *Afr Health Sci*. 2015;15(2):385-93.
17. Hadifah Z. Pemenuhan Tugas Pengawas Menelan Obat ( PMO ) Bagi Penderita Tuberculosis ( Tb ) Sebagai Indikator Penyakit Menular Di Puskesmas Kota Sigli Kabupaten Pidie. 2015: 17-23.
18. Friska, J. 2012. Anti Tuberculosis Pada Pasien Tuberculosis Paru Di Puskesmas Kecamatan Jatinegara Tahun 2012.
19. Van-Tam, V., Larsson, M., Pharris, A., Diedrichs, B., Nguyen, H. P., Nguyen, C. T. K., ... & Thorson, A. 2012. Peer support and improved quality of life among persons living

- with HIV on antiretroviral treatment: a randomized controlled trial from north-eastern Vietnam. *Health and quality of life outcomes*, 10(1), 53.
20. Haprilianingtyas T, Makhfudli M, Pratiwi IN. Family Coping Affects The Quality of Life Patients with Tuberculosis. In 8th International Nursing Conference on Education, Practice, and Research Development in Nursing (INC 2017) 2017 Apr 8. Atlantis Press
  21. Alotaibi, B., Id, Y. Y., Mushi, A., Maashi, F., Thomas, A., Mohamed, G., ... Id, S. Y. 2019. Tuberculosis knowledge, attitude and practice among healthcare workers during the 2016 Hajj, 1–15 Wondale B, Medihn G, Teklu T, Marsha W, Tamirat M, Ameni G. A retrospective study on tuberculosis treatment outcomes at Jinka General Hospital, southern Ethiopia. *BMC Res Notes*. 2017;10(1):1–7.
  22. Awad L, AL MUADDI FA, ALAMRI MA, ALOTAIBI MM, ALOTAIBI AM, ALZAHRANI BS, ALOTAEBI TF, inventors; University of Dammam, assignee. Water filtration apparatus and a method of using thereof. The United States patent application US 10/287,184. 2019 May 14
  23. Khan Y, Vazquez-Leal H, Hern L, Faraz N. Variational iteration algorithm-II for solving linear and non-linear ODEs. *International Journal of Physical Sciences*. 2012 Jun 29;7(25):3099-4002