Body Alteration of Patients with Tuberculosis who Get Medication at the Public Health Centre

Suprajitno1, Sri Mugianti2
1,2Nursing Departement, Poltekkes Kemenkes Malang, Indonesia

Abstract
Patient with tuberculosis who already experience 6 months of treatment may felt body alteration. The study aimed to illustrate the body alteration of Tuberculosis patients who got medication at the Public Health Centre. The design of the study used cross sectional. The sample was 141 tuberculosis patients who got medication at the Public Health Centre in Blitar which was selected by simple random sampling. The variables were height, weight, urine color, feeling of bored related to the medication and willingness to stop taking the medication routinely. The data was collected at the patient’s home on August - November 2018. The data was collected by instruments of height gauge, weights, and interview form. The data was analyzed descriptively. The results showed that most of the changes were in the physical such as the weight loss, the red urine, and nausea. The patient’s nausea caused a decrease in intake and had an impact on the patient’s weight that went down. It is important for nurses in Public Health Centre to provide medical services and information through health education before the first medication.

© 2020 Journal of Ners and Midwifery

Correspondence Address:
Poltekkes Kemenkes Malang – East Java, Indonesia
Email: bedonku@gmail.com
DOI: 10.26699/jnk.v7i3.ART.p439–442
This is an Open Access article under the CC BY-SA license (http://creativecommons.org/licenses/by-sa/4.0/)

P-ISSN : 2355-052X
E-ISSN : 2548-3811
INTRODUCTION

Eradication of tuberculosis in Indonesia has been launched since 2011 (Kemenkes RI, 2011), but positive new tuberculosis patients with x-rays and sputum examinations are always there. New patients received intensive medication at the Public Health Centre for a minimum of 6 months and periodically performed sputum examined as an evaluation. Patients with tuberculosis during medication at the Public Health Centre are given additional food that aims to maintain nutritional status and increase endurance during medication.

Tuberculosis patients feel weight losses every time measure their weight before taking medicine at the Public Health Centre. The weight and height are important measure to assess body mass index so that proper nutritional needs can be determined. Health worker always record in the patient’s medical record, but never evaluate the physical and emotional alteration. Physical alteration and feelings of the patients due to medication also do not get the attention of health workers. Alteration that appear, for example thin body and feeling bored of taking medication. The purpose of the study was to illustrate the alteration in the body condition of tuberculosis patients who got medication at the Public Health Centre.

METHODS

The design of the study used cross sectional. The sample was 141 tuberculosis patients who received medication at the Public Health Centre in Kabupaten and Kota Blitar which was selected by simple random sampling. The variables were height, weight, urine color, feeling of bored related to the medication and willingness to stop taking the medication. The place of the data collection was at patients’ homes on August – November 2018. The data was collected by instruments collection tools such as height gauges, weights, and interview forms. The data were analyzed descriptively.

RESULTS

The study results are presented at Tables 1 and 2.

Table 1 Characteristics of tuberculosis patients

| Description                  | Age (years) | Height (cm) | Weight (kg) | BMI | Chest (cm) | Waist(cm) |
|------------------------------|-------------|-------------|-------------|-----|------------|-----------|
| Minimum                      | 15          | 141         | 30          | 11.02 | 60         | 53        |
| Maximum                      | 87          | 177         | 78          | 31.64 | 96         | 92        |
| Average                      | 48.98       | 159.30      | 47.38       | 18.61 | 75.26      | 68.83     |
| Standard deviation           | 16.43       | 7.38        | 8.49        | 3.16  | 7.26       | 7.24      |

Table 2 Body alteration of tuberculosis patients

| No | Alteration and feelings of patient | f  | %   |
|----|-----------------------------------|----|-----|
| 1  | Patient’s perception of body condition: |    |     |
|    | a. Very thin                       | 31 | 21.99|
|    | b. Thin                             | 99 | 70.21|
|    | c. Normal                           | 10 | 7.09 |
|    | d. Obese                            | 1  | 0.71 |
| 2  | BMI category:                      |    |     |
|    | a. Underweight                     | 68 | 48.22|
|    | b. Normal                           | 71 | 50.35|
|    | c. Overweight                      | 1  | 0.71 |
|    | d. Obese                            | 1  | 0.71 |
| 3  | Urine color:                       |    |     |
|    | a. Red                              | 116| 82.27|
|    | b. Not red                          | 25 | 17.73|
| 4  | Nausea:                            |    |     |
|    | a. Yes                              | 55 | 39.01|
|    | b. No                               | 86 | 60.99|
| 5  | Feeling bored the medicine:        |    |     |
|    | a. Yes boring                       | 16 | 11.35|
|    | b. Not boring                       | 12 | 87.23|
|    | c. Not filling                      | 32 | 1.42 |
| 6  | Thinking to stopped of medication:  |    |     |
|    | a. Yes want to quit                 | 13 | 9.32 |
|    | b. Do not want to quit              | 126| 89.36|
|    | c. Not filling                      | 2  | 1.42 |
DISCUSSION

The lowest age for tuberculosis patients was 15 years (Table 1) and had been living with the family. Four patients (2.84%) were adolescents aged 15-18 years and high school education, according to the guidelines of Pengendalian Tuberkulosis di Indonesia (Tuberculosis Control in Indonesia) (USAID, 2017; Zhang et al., 2017). The parents of the adolescent patients suffered tuberculosis three years ago and now already cured. This situation illustrates that the transmission easily occurs to family members. However, the prevention of transmission was also easy for families to do because families had five tasks in health, namely recognizing health problems, deciding to choose actions, caring for sick family members, modifying the environment for sick family members, and utilizing health care facilities (Suprajitno, 2004). The main task of families who had family members suffering from TB were preventing the transmission, increase the immune by immunization and providing adequate nutrition, creating an environment that can break the chain of transmission, and supporting patient care at the Public Health Centre (Ali & Katz, 2015; Kemenkes RI, 2017). The families task with family members suffering of tuberculosis are to recognize the symptoms of cough if not heal for two weeks, weight loss, night sweats, and reduced appetite (Hansson & Hansson, 2011). This task was in line with the role of protecting family members, namely preventing and medicating for tuberculosis patients, but family tasks need to be supported by knowledge and attitudes (Suprajitno et al., 2015; Yermi et al., 2018).

The analysis result (Table 1) illustrates that the body mass index of TB patients is normally distributed and there is no outliers, but platykurtic, so quantitative analysis can be continued (Hansson & Hansson, 2011; Velasco & Verma, 1998). The body mass index of tuberculosis patients is largely in the thin and normal category, according to the patient’s perception of the body’s own condition (Table 2) which is feeling very thin, thin, and normal. Perceptions about the body condition according to the patient’s feeling that weight decreases. Body mass index and patient perceptions of body condition is not a barrier to medicated, although medication failure (death) occurred in patients who have underweight (Yen et al., 2016).

The interviews results about the nutrition given by the family to patients were quite adequate such as carbohydrates, vegetables, and proteins sourced from eggs, freshwater fish, beef, and chicken. The family statement was supported by the Public Health Centre nurse statement that every month they had been given additional protein meal in the form of canned milk from the Public Health Centre. The purpose of supplementary feeding was to maintain the patient’s immune system during medication. The role of the family to prevent a decreased body mass index and prevent medication failure by providing adequate nutrition (Kemenkes RI, 2017; Samal, 2017).

During tuberculosis medication, the patient’s urine becomes red and feels nauseous (Table 2). These changes are the effects of Isoniazid (INH), Rifampicin (RIF), Pyrazinamide (PZA), Ethambutol (Myambutol) (Disease Branch, n.d.). Urine discoloration and nausea had been realized by patients and families because they (patients and families) already had been received health education from the Public Health Centre nurses before medication (Suprajitno et al., 2018). They also got of health education about the families efforts to increase the patient’s vitality by giving traditional herbal from the curcuma rhizome, which could increase lymphocytes (Dewi et al., 2014) and as bactericidal (Yumas, 2016). The family said that patients were also given ginger processed drinks every day to increase vitality.

Treatment received by tuberculosis patients cause boredom and thinking to stop of medication (Table 2). Such feelings and thoughts were caused by the medication which around 6-9 months. The patients who were not bored and did not think to stop the medication were larger than who were bored. The interview results from the patients who were bored and thought to stop the medication were patients which must be careful while behaving, for example when eating and drinking in the public area. Whereas, patients who were not bored and did not think to stop medication said that the disease needed to be treated and did not spread to people around or colleagues (Churchyard et al., 2017; Wulandari et al., 2015).

CONCLUSION

The body alterations which occurred were (1) most of the tuberculosis patient was the thinner body, the red urine, bored, nausea, and (2) a little of tuberculosis patients felt tired of taking medication and thinking of stopping the drugs.
SUGGESTION
The body alteration and feelings of the patients must become the concern of the Public Health Centre nurses who provide medication. Patients must be given health education before the first medication.

REFERENCES
Ali, A., & Katz, D. L. (2015). Disease Prevention and Health Promotion: How Integrative Medicine Fits. American Journal of Preventive Medicine, 49(5 Suppl 3), S230-40. https://doi.org/10.1016/j.amepre.2015.07.019

Chuchyard, G, Kim, P, Shah, N.S., Rustomjee, R, Gandhi, N., Mathema, B., Dowdy, D., Kasmar, A., & Cardenas, V. (2017). What We Know About Tuberculosis Transmission: An Overview. The Journal of Infectious Diseases, 216(suppl_6), S629–S635. https://doi.org/10.1093/infdis/jix362

Dewi, M., Aries, M., Hardinsyah, Dwiriani, C. M., & Churchyard, G., Kim, P., Shah, N. S., Rustomjee, R., Gandhi, Ali, A., & Katz, D. L. (2015). Disease Prevention and Medication. Patients must become the concern of the Public Health Centre nurses who provide medication.

Dewi, M., Aries, M., Hardinsyah, Dwiriani, C. M., & Januwati, N. (2014). Perkembuhan Tentang Manfaat Kesehatan Temulawak (Curcumaxanthorrhiza.) Serta Uji Klinis Pengaruhnya pada Sistem Imun Humoral pada Dewasa Obes. Jurnal Ilmu Pertanian Indonesia, 17(3), 166–171. http://journal.ipb.ac.id/index.php/JIPI/article/view/8337

Disease Branch, C. (n.d.). Tuberculosis and You A Guide to Tuberculosis Treatment and Services How TB Is Diagnosed. Retrieved January 21, 2019, from www.publichealth.nc.gov

Hansson, K. N., & Hansson, S. (2011). Skewness and Kurtosis: Important Parameters in the Characterization of Dental Implant Surface Roughness—A Computer Simulation. ISRN Materials Science, 2011, 1–6. https://doi.org/10.5402/2011/305312

Kemenkes RI. (2017). Strategi Nasional Pengendalian Tuberkulosis di Indonesia 2010-2014. http://www.searo.who.int/indonesia/topics/tb/stranas_tb-2010-2014.pdf

Kemenkes RI. (2017). Terapkan Germas dan Pendekatan Keluarga untuk Temukan dan Obati Kasus Tb. http://www.depkes.go.id/article/print/17040300006/terapkan-germas-dan-pendekatan-keluarga-untuk-temukan-dan-obati-kasus-tb.html

Samal, J. (2017). Family perspectives in the care and support of tuberculosis patients: An Indian context. The Journal of Association of Chest Physicians, 5(2), 67. https://doi.org/10.4103/2320-8775.202899

Suprajitno. (2004). Asuhan Keperawatan Keluarga: Aplikasi dalam Praktik (Monica Ester (ed.); 1st ed.). EGC. https://books.google.co.id/books?id=dpbPuogtmNkC&pg=PR4&dq=suprajitno&hl=en&sa=

USAID. (2017). Pengendalian Tuberkulosis di Indonesia | U.S. Agency for International Development. https://www.usaid.gov/id/indonesia/fact-sheets/reducing-multidrug-resistant-tuberculosis-indonesia

Velasco, F., & Verma, S. P. (1998). Importance of Skewness and Kurtosis Statistical Tests for Outlier Detection and Elimination in Evaluation of Geochemical Reference Materials. Mathematical Geology, 30(1), 109–128. https://doi.org/10.1023/A:1021717522790

Wulantari, A.A., Nurdin, M., & Sakundarno, A. (2015). Faktor Risiko dan Potensi Penularan Tuberkulosis Paru di Kabupaten Kendal, Jawa Tengah Risk Factor and Potential of Transmission of Tuberculosis in Kendal District, Central Java. Jurnal Kesehatan Lingkungan Indonesia, 14(1), 7–13. https://ejournal.undip.ac.id/index.php/jkli/article/viewFile/10031/7993

Yen, Y.-F., Chuang, P.-H., Yen, M.-Y., Lin, S.-Y., Chuang, P., Yuan, M.-J., Ho, B.-L., Chou, P., & Deng, C.-Y. (2016). Association of Body Mass Index With Tuberculosis Mortality: A Population-Based Follow-Up Study. Medicine, 95(1), e2300. https://doi.org/10.1097/MD.0000000000002300

Yermi, Ardi, M., Tahmir, S., & Pertiwii, N. (2018). Knowledge and Attitudes with Family Role in Prevention of Pulmonary Tuberculosis in Maros, Indonesia. IOP Conf. Series: Journal of Physics: Conf. Series, 1028, 12001. https://doi.org/10.1088/1742-6596/1028/1/012001

Yumas, M. (2016). Diversifikasi Manfaat Rimpang Temulawak sebagai Komponen Aktif terhadap Bakteri Streptococcus Mutans pada Pembiitan Permen Kesehatan. Jurnal Riset Teknologi Industri, 11(6). 1. https://doi.org/10.26578/jrti.v6i11.1502

Zhang, H., Li, X., Xin, H., Li, H., Li, M., Lu, W., Bai, L., Wang, X., Liu, J., Jin, Q., & Gao, L. (2017). Association of Body Mass Index with the Transmission of Tuberculosis: a Population-based Study among 17796 Adults in Rural China. Scientific Reports, 7, 41933. https://doi.org/10.1038/srep41933