

Application of Nursing Interventions in Patients with Pulmonary TB in Family Nursing Care in the Work Area of the Gorontalo District Health Center

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Abstract. *Tuberculosis has been an emerging threat in health of people that cause morbidity, disability, even increase the high number of deaths. So, it is necessary to find out the way to overcome it. Providing family nursing care, as one of health care interventions, is one of the best solutions to treat the patients with pulmonary tuberculosis. The aim of this research is to find out the implementation of health care interventions in patients with pulmonary tuberculosis at Comunity Health Centers of Gorontalo Regency. This has been running with the government's program 'Healthy Indonesia with Family Approach (PIS-PK)'. The research team applied Mixed-Method (Qualitative-Quantitative) with 16 families as respondents. The result of the research showed that there was a change in mean values of knowledge and attitude of family after applying health care interventions with P-value 0,001. This is directly proportional to the five family health tasks, the better knowledge and attitude of family about pulmonary tuberculosis disease, the better they understand health problem recognition, decision making, family health care, maintaining a conducive home environment and health facilities. Therefore, the implementation of family health care can improve and foster family health in preventing pulmonary tuberculosis disease.*

Keywords: : *Family Health Care Interventions, Pulmonary Tuberculosis Patients, Gorontalo*

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INTRODUCTION

Tuberculosis is an infectious disease caused by the bacteria *Mycobacterium tuberculosis* (Health, K 2014). Based on Global data in 2016 there were 10.4 million TB incident cases which was equivalent to 120 cases per 100,000 population. According to the Global TB Report (World Health Organization, 2015), Indonesia accounts for 10% of the world's total TB burden and around 100,000 (range 66,000-150,000) people are

estimated to die from TB every year. Of the five countries with incidences of pulmonary TB cases, Indonesia ranks second after India and is estimated at 1.6 million (0.65% of the general population) prevalence cases with 1 million incident cases annually (Kemenkes, 2018).

Based on data from the Gorontalo Provincial Health Office in 2015, the total number of positive smear TB cases was 1566 people, in 2016 there were 1950 people and in 2017 there were 2032 people. This is directly proportional to Gorontalo Regency, there was also an increase in positive smear TB cases in 2015 as many as 434 people, in 2016 as many as 491 people, and in 2017 as many as 612 people. This shows the number of TB cases has increased to 25% (Gorontalo Provincial Health Office, 2017)

According to data from the Gorontalo District Health Office, the coverage of smear positive pulmonary TB in 2014 amounted to 282 BTA, conversion 202 with a percentage of 71.6%, in 2015 smear positive amounted to 36, conversion 252 with a percentage of 68.7% and in 2016 BTA positive totaling 377, conversion 309 with a percentage of 81.9% (Gorontalo District Health Office, 2017). From the results of observations and interviews, it was found that 4 puskesmas were not optimal in implementing family nursing care by community nurses. Nurses only focus on curative action.

Based on the data above, tuberculosis is still a public health problem that causes high morbidity, disability, and death, so it is necessary to make efforts to overcome it. This problem has become very serious, one of the roles in TB treatment is Community and Family Nurses who have a role as nursing care providers including assessing risk factors, identifying nursing diagnoses, making plans to achieve the expected results, implementing nursing interventions, and conducting evaluations. on the effectiveness of the intervention that has been given. In handling TB, the priority is promotive and preventive aspects, without neglecting curative and rehabilitative aspects. This is a continuation of the government's program Healthy Indonesia Program with a Family Approach (PIS-PK). Health promotion is one of the efforts made to the community so that they are willing and able to improve and maintain their own health. By first exploring the community's perception of TB, making it easier to provide community nursing care.

METHODS

This study uses a mixed method research design (quantitative-qualitative), the population is a family who lives at home with a client who suffers from pulmonary TB with a sample of 16 families selected by simple random in the Gorontalo district health center. The method of collecting data is by means of induction, which means that the analysis is based on real conditions in the field, and not based on mere thoughts, understandings, let alone the interests of the research object. In addition, knowledge and attitudes were measured using a questionnaire that had been tested for validity and reliability with the value of Cronbach's Alpha ($R = 0.959$) which means the questionnaire used was valid

RESULTS AND DISCUSSION

Table 1. Frequency distribution of respondent characteristics

Variable	Frequency	Percentage (%)
Family age klien		
1. Adolescent akhir (18-25 years old)	3	18,8
2. Early adults (26-35 years)	4	25
	6	37,5

3. Late adults (36-45 years)	2	12,5
4. Early age (46-55 years)	1	6,2
5. Final seniors (55-65 years old)		
6. Seniors (>65 years)		
Family gender klien		
1. Man	6	37,5
2. Woman	10	62,5
Family education level klien		
1. Tidak sekolah	0	0
2. School dasar	4	25
3. Primary highschool	4	25
4. High school abag	7	43,8
5. Collegetggi	1	6,2
Family work klien		
1. PNS/PTT	2	12,5
2. Self employed	5	31,2
3. Housewives tangga	8	50
4. Fisherman	1	6,2
Kinship with klien		
1. Parents	4	25
2. Wife	4	25
3. Husband	2	12,5
4. Child	6	37,5
Previous OAT Treatment		
1. Not yet pernah	13	81,2
2. Ever	3	18,8

Table 2. application of nursing interventions in pulmonary tb sufferers in family nursing care

No	Variable	Mean		Standard deviation		P value
		Pre	Post	Pre	Post	
1	Knowledge	9,38	12,25	1,408	1,000	0,001
2	Attitude	43,94	49,12	4,404	3,384	0,001

Table 1 shows the characteristics of respondents from 16 people based on age, most of them are late adults, amounting to 6 people (37.5%), According to Laily et al, (2015) Pulmonary TB sufferers are more in adulthood, this is made possible by two causes, the first is people Previously, adults had been infected with primary TB when they were young, but prevention was not carried out properly so that when they were adults they reappeared and secondly, adults are susceptible to infection because they are exposed to activities and their environment where they have to interact with people with Pulmonary TB in their environment who are easily infected. The majority are female with 10 people (67.5%), This research is in line with WHO data (2015) where in 2014 it was known that there were 3.2 million pulmonary TB patients in the world with female sex being the main cause of death in women. . The increase and death of women in pulmonary TB is also caused by discrimination against women. Where discrimination against women in the world mostly has an effect on delaying treatment which has a negative impact on the severity of pulmonary TB so that the development of bacteria in the body is increasing

so that the infection caused is getting more severe. In this study, the majority of the client's families were women. This is supported by Thomson et al, (2016) that women visit health services more often for their health compared to men. Most of them have an education level at the high school level 7 people (43.8%). The results of the study found that the average level of education at the high school level (SMA). Ruditya (2015) argues that education greatly affects one's knowledge. The higher the level of education, the information will be received better and easier. Conversely, the lower a person's education, the greater the risk of suffering from a disease. 8 people (50%) have a type of work as housewives, most of the family kinship with the client is 6 children (37.5%) and the client has never undergone OAT treatment before as many as 13 people (81.2).

Table 2, the average level of knowledge on pre-test measurements before giving family nursing care interventions is 9.38 with a standard deviation of 1.408. There was an increase in the average after the intervention, which was 12.25 with a standard deviation of 1,000. At the stage of further analysis concluded that there was a significant difference in the level of knowledge in the post test measurement after being given the intervention where the p value < 0.05 (p = 0.001) indicated that the level of knowledge in the pre test measurement was smaller than the level of knowledge in the post test measurement.

If the family's knowledge is good, the family tends to make prevention efforts. According to Friedman, (1998) the application of family nursing care begins with how the family's knowledge regarding the implementation of family nursing care for patients with pulmonary TB starts from the assessment stage, formulation of diagnoses, nursing interventions, implementation of nursing implementation to the nursing evaluation stage. In the assessment stage, the nurse measures the condition of the family based on health norms to overcome their health. After being studied more deeply, nursing diagnoses were formulated based on 5 family health tasks where families were able to recognize problems, make decisions, carry out treatments, create an environment and utilize health facilities in the local environment. According to Duhamel, (2015) nurses must be involved in providing interventions using their expertise and experience in conceptualizing problems and designing solutions to promote family health, manage health problems and reduce or prevent disease. In addition, according to Wright & Leahey (2013), family interventions can also increase understanding and increase confidence in overcoming health problems that occur. Families have a new perspective and improve family functioning.

Based on table 2, the average attitude change in the pre-test measurement before giving family nursing care interventions was 43.94 with a standard deviation of 4.404. There is an increase in the average after giving the intervention that is 49.12 with a standard deviation of 3.384. At the stage of further analysis concluded that there was a significant difference in attitude change in the post test measurement after being given the intervention where the p value < 0.05 (p = 0.001) indicated that the attitude change in the pre test measurement was smaller than the attitude change in the post test measurement.

The phenomenon found in the family that the symptoms he experienced such as coughing for approximately three weeks was common, so there was no effort to overcome it. The habit of consuming drugs without a prescription from health workers and switching to traditional medicine is still common. The family's attitude towards pulmonary TB disease is common because they still feel it is normal. Seeing things like

this as an effort to overcome it, it is necessary to change the attitude of the sufferer. This is in line with research conducted by Iribarren, (2014) that health workers have difficulty convincing clients and families to continue TB health care when they feel better. The importance of awareness of patients and their families towards TB care can be a consideration for health workers in increasing adherence, reducing stigmatization and improving treatment outcomes.

Changes in a person's attitude can not be separated from the role of the family. Family is a place to spend time and place to absorb values and norms before getting to know the wider environment. The expected attitude is how the family's efforts to prevent transmission are given after being given knowledge in nursing implementation such as the importance of sunlight entering the house because mycobacterium tuberculosis germs will develop in humid places and where the patient eats from other family members is separated. Therefore, nursing intervention also needs to be given to the family. Bell, (2009) added that nursing in the family can be a place for health-promoting practices to improve health in the next few generations.

Family Health Duties

Getting to know family health issues

Knowledge is the result of sensing certain objects to obtain the results of Tofu. In recognizing family health problems, family members need to be aware of the circumstances and conditions of their family members and then record the changes that occur and when they occur. The expected understanding in recognizing family health problems is that clients and families understand the meaning of TB, signs and symptoms of pulmonary TB, causes, prevention and treatment. Basically, the informants and their families answered almost the same where they had not been able to understand well about pulmonary TB and implemented unhealthy living behaviors that had been carried out for years according to the statements submitted by the informants below:

"People don't know this is a disease, people think it's just an ordinary disease because all we feel is fever, cough and sometimes dizziness. When people go to the doctor, we say that people have consumed alcohol and smoked for years, since they were in their teens. Then the doctor recommends blood pressure and x-rays. Then the results came out, the doctor said we have pulmonary TB".

Furthermore, the informant stated that the client did not know that the pulmonary TB treatment had to be done routinely for 6 months for category I. The client should not drop out of medication to avoid drug resistance according to the informant's statement below:

"We already know that we have TB and it is contagious. We have been treated before but now it appears again. We have been hot and cold for 2 weeks and coughing. Sometimes also coughing up blood 2 times and quite a lot. We are also already bored but I believe God willing, we will recover."

Deciding on Family Health Care

The actions taken by the family are expected to be appropriate in order to overcome family health problems. The accuracy and speed of getting treatment also affects the cure rate of pulmonary TB patients. Most patients with pulmonary TB are late for treatment so that complications can occur. This is due to the inaccuracy of decisions taken by family members. Decision makers in the family play an important role in the

treatment process. If there is a sick family, family life will be disrupted. The family will try to find the best treatment so that the family can be healthy again. However, the family's response may vary based on existing knowledge and experience, for example taking the family to a health facility, traditional medicine, buying family medicine at the nearest shop, or even treating it in their own way. The informant explained that if a family member was sick, the head of the family decided not to bring it to health services. This is in accordance with the statement conveyed by the informant below:

"If you're sick, we just take a massage. We never take him to the doctor."

"If we are sick, we take it to the grandmother who is taking care of it, but the prayers will be."

"When we are sick, we go to grandma because we take care of the innocent".

"If we get sick, we just buy medicine at the shop next to the house"

Furthermore, the informant further stated that communication that occurs in the family is closed, there is no previous health education in the family if the disease is not overcome, the lack of support among family members, and the respondent's unwillingness to notify his illness according to the informant's statement below:

"We don't know if our child goes to the doctor, our child will take medicine, only then will we know that he is sick and go to the doctor. This may be because our children do not want to know the type of illness they have. Previously, our child only complained that he often felt cold at night."

This is consistent with the findings in research conducted by Rodrigues et al, (2016) that sufferers maintain confidentiality about the disease due to having a bad social stigma against TB disease, fear of social judgment and shame. So the importance of a detailed explanation related to the disease process and the possibility of healing needs to be considered.

Caring for Family Members

The decision taken by the family after knowing that a family member is sick is to take care of the family member as best as possible, but the family also has limitations. Therefore, if a family member is sick, then there is a need for continued treatment both in health services and at home if the family has the ability to perform first aid. Families play an important role in preventing the transmission of Pulmonary Tuberculosis (pulmonary TB). One of the efforts implemented by the family is to eat nutritious food, get enough rest, exercise, cover your mouth when you cough, and don't spit anywhere.

Malnutrition will affect the body's resistance so that it is susceptible to diseases including pulmonary TB. Fulfillment of nutrition is one of the family's duties in providing care for sick family members. So if this is not done properly then the client's condition will not heal. Family behavior in carrying out family health tasks is also influenced by family socio-economic which affects family knowledge in fulfilling nutrition for sick family members. This statement is in accordance with the statement expressed by the informant which is illustrated below:

"There was no special treatment after my child was treated. There are no dietary restrictions, my son only eats the food he wants which is obviously healthy."

From the interview results, it was found that the family knew healthy food but did not know how to select and process good food for people with pulmonary TB.

The following are the statements of the informants, namely:

"If a family member is sick, we usually just make a concoction that has been passed down from generation to generation from the family. We never take them to the doctor, let alone take medicine from the doctor."

From the results of the interview, it was found that the family used the plants around their yard based on the experience that came from the previous family. Not based on knowledge of drugs made from research results.

Modifying the Environment

Modifying the environment is a guarantee of family health to support the presence of sick family members. The next task of family health is to modify the home environment so that family health is maintained. In accordance with the statement conveyed that the health of family members is influenced by lifestyle, stress and the environment. To ensure the health of the family, it is necessary to pay attention to the environmental factors of the place of residence. One of the efforts made by families in modifying a healthy environment is to keep the house clean and regulate ventilation. Adjust the ventilation so that the air feels fresh because there is air exchange. The results of interviews from family informants did not pay attention to modifying the environment because they did not have time where the family was busy to earn a living according to the statements conveyed by the informants below:

"These doors and windows are never closed, because we are rarely at home. We have clothes in the school canteen. We'll go home at 6 in the morning and come home at 5 in the afternoon."

Furthermore, the informant's statement where the family can prevent the transmission of TB germs by modifying the internal environment of the house according to the statement below:

"We always clean the house both inside and outside. We also often open the window so that the room is not humid."

The results of this interview do not provide many diverse opinions about the environment, this can be caused by cultural factors. This is in line with the research of stlund, (2014) that the existence of cultural similarities can be a contribution to the lack of variation in responses issued by the sufferer's family in answering questions.

Utilizing Health Facilities

Utilizing health facilities aims to determine the extent of the severity of a disease or to assess the success of an action taken by family members. Utilization of health services for families of patients with pulmonary TB is very necessary to maintain the stability of the client's health. Where with the development of the times, health services also developed which used to be far from family settlements in villages so that rural communities were difficult to reach. However, nowadays, every region already has primary health services such as Puskesmas which can be used for regular health checks by patients with pulmonary TB. Families can take advantage of the first health facilities such as Puskesmas and family health clinics. Statements from informants are illustrated below:

"Every time someone is sick, we immediately take them to the health center or to a general practitioner's practice."

The following are the statements of the informants, namely:

"Thank God we got KIS, so if someone is sick, we go straight to the doctor or to the puskesmas".

The existence of several health programs to eliminate TB in primary health care centers, especially in health centers, can support the success of TB treatment. Based on the results of the focus group discussion with several holders of the Infectious Disease Program at the district health center. Gorontalo that the treatment of pulmonary TB itself has been in accordance with standard treatment procedures, checking the contacts of family members is carried out on clients who have detected TB and tracking clients who have dropped out of treatment in the TB Mangkir program. The health program in Indonesia, namely GERMAS (healthy community movement), namely PISPK (healthy Indonesia program with a family approach) also supports TB treatment, when cases are found in the field, the client will be directly intervened by the health program holder at the puskesmas to get further treatment

CONCLUSION

Based on the results and discussion of the study, it can be concluded that nursing interventions in family nursing care in the work area of the Gorontalo District Health Center are effective in increasing family knowledge and attitudes in caring for family members who suffer from pulmonary TB disease. This is directly proportional to the five family health tasks that the better the family's knowledge and attitudes on pulmonary TB disease, the better the family's understanding of problem recognition, decision making, family health care, maintenance in modifying the environment and utilization of health facilities. Therefore, the implementation of family nursing care starting from the assessment, formulation of diagnoses, intervention implementation of nursing implementation to the evaluation stage can improve and maintain family health in the prevention and treatment of pulmonary TB disease.

REFERENCES

- Bell, J. M. (2009). Family systems nursing: Re-examined. *Journal of Family Nursing*, 15(2), 123-129.
- Duhamel, F., Dupuis, F., Turcotte, A., Martinez, A. M., & Goudreau, J. (2015). Integrating the illness beliefs model in clinical practice: A family systems nursing knowledge utilization model. *Journal of Family Nursing*, 21(2), 322-348.
- Friedman, M. M. (1998). Keperawatan keluarga: teori dan praktik. *Jakarta: EGC*, 177.
- Iribarren, S. J., Rubinstein, F., Discacciati, V., & Pearce, P. F. (2014). Listening to those at the frontline: Patient and healthcare personnel perspectives on tuberculosis treatment barriers and facilitators in high TB burden regions of Argentina. *Tuberculosis research and treatment*, 2014.
- Laily, D. W., Rombot, D., & Lampus, B. (2015). Karakteristik pasien tuberkulosis paru di puskesmas tuminting manado. *Jurnal Kedokteran Komunitas Dan Tropik*, 3(1).
- Rodrigues, I. L. A., Motta, M. C. S. D., & Ferreira, M. D. A. (2016). Social representations of nurses on tuberculosis. *Revista brasileira de enfermagem*, 69, 532-537.
- Ruditya, D. N. (2015). Hubungan Antara Karakteristik Penderita Tb Dengan kepatuhan Memeriksa Dahak Selama Pengobatan. *Jurnal berkala epidemiologi*, 3(2), 122-133.

WHO.2015. Tuberculosis in Women. Available at: www.who.int/tb. [Sitasi: 13 February 2017].

Wright, L. M., & Leahey, M. (2013). *Nurses and families: A guide to family assessment and intervention* (6th ed.). Philadelphia, PA: F.A. Dav