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# The Nursing Home Care Module in Improving Self Care Agency of Patient with Pulmonary Tuberculosis in the City of Bima, West Nusa Tenggara

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## ABSTRACT

**Background** : Pulmonary TB disease suffered by individuals will have a very big impact on their lives, will physically cause complications such as the spread of infection to other organs, nutritional deficiencies, severe coughing up blood, resistance to many drugs, economically TB sufferers will lose annual income around 20-30%, in addition to other adverse effects are socially stigmatized and even ostracized by the community. **Objective** : this study was to analyze the effect of implementing Nursing Home Care Module in improving self-care agency in pulmonary TB patients. **Methods** : pre-experimental study with a one group pretest-posttest design was used. **Results** : the self-care agency of pulmonary tuberculosis patients in the majority of the pre-test results was in enough category (50.0%) and only a few in the good category (15.6%). While the post-test results showed that most respondents were in enough category (65.6%) and the rest (34.4%) were in a good category. The paired t-test results showed the value of  $p = 0.001$  ( $p < 0.05$ ), this indicates that the research hypothesis was accepted, which means that there is an influence of the application of the Nursing Home Care Module in improving self-care agency in patients with pulmonary TB. **Conclusion** : The ability of self-care agency for pulmonary tuberculosis patients who have increased include knowledge of pulmonary tuberculosis, treatment of TB symptoms, regulation of diet, prevention of transmission and adherence to treatment programs. Further research is suggested to be able to explore nursing interventions that can improve the self-care ability of patients with pulmonary TB.

**Keywords** : Nursing Home Care Module; Pulmonary TB; Self-Care Agency

## INTRODUCTION

Pulmonary tuberculosis (TB) is a bacteriologically confirmed or clinically diagnosed TB disease that involves pulmonary parenchyma or tracheobronchial branching (WHO, 2014). The global effort to control TB was revived in 1991 when a World Health Assembly (WHA) resolution recognized TB as a major global public health problem (WHO, 2006). Millions of people worldwide suffer from pulmonary tuberculosis (TB) every year and become one of the 10 main causes of death due to infectious diseases after HIV / AIDS (WHO, 2018). In Indonesia, in 2018 it is estimated that the number of pulmonary TB cases will reach 843,000 new cases with a case notification rate of 193 per 100,000 population (Kemenkes RI, 2019). In the province of West Nusa Tenggara, TB disease was detected with a prevalence of 0.32% spread throughout the Regency / City (Kemenkes RI, 2018). Then in the city of Bima in 2016 with a population of 159,736 people, have a pulmonary TB burden with a case notification rate of 128.96 at 100,000 population (Dinkes Kota Bima, 2017).

Pulmonary TB disease suffered by individuals will bring a very big impact on their lives, physically will cause complications such as the spread of infection to other organs (brain, bones, joints, kidneys, liver and other organs), nutritional deficiencies, severe coughing up blood, resistance to many drugs (Smeltzer, Bare, Hinkle, & Cheever, 2010), economically TB sufferers will lose an annual income of around 20-30%, in addition to other adverse effects socially stigmatized and even ostracized by the community (Kemenkes RI, 2011).

TB control in Indonesia has been going on since the Dutch colonial era, in 2000 the DOTS (Directly Observed Treatment, Shortcourse chemotherapy) strategy was implemented nationally in all health care facilities especially Puskesmas which were integrated into basic health services (Kemenkes RI, 2011). The eradication of pulmonary tuberculosis in the City of Bima has implemented a DOTS strategy with passive case finding through active promotion. During treatment, TB sufferers have received health education using the counseling method given when they were first diagnosed and when receiving TB drugs every month. However, the patient's knowledge about pulmonary tuberculosis is still lacking, the interest of sufferers and families to use health facilities is still low and there are still dropping out of drugs. routine 54.9% (Kemenkes RI, 2018). Can not stand side effects, the treatment period feels long, do not routinely seek treatment and feel healthy is the reason given by patients for not routinely taking the drug Tb (Kemenkes RI, 2018). Therefore, researchers present with the Nursing Home Care Module which contains guidelines and guidelines as a guide for patients and families towards the success of TB treatment.

The success of TB treatment is influenced by several factors including family support, socio-economic support, doctors, and nurses support, availability to access health services, social stigma, psychological pressure, and knowledge factors (Putra & Toonsiri, 2019). Nurses in accordance with their role as educators and counselors for patients can provide assistance to TB patients in the form of supportive-educative systems using various methods such as teaching, guiding, supporting, and providing environment (Darmansyah, Nursalam, & Suharto, 2013), which have an important contribution to improving TB patient's self-care agency in this case carries out care independently, patient compliance with treatment and the ability to control the disease (Muhtar, 2013).

Each individual has the power to carry out the fulfillment of self-care independently called the self-care agency (Tomey & Alligood, 2010), however, when a condition in which a person experiences limitations in self-care then someone needs help from others, one of them is from a nurse called a nursing agency. Nurses are responsible for providing nursing care to patients and families by designing interactive nursing interventions that can help patients and families optimize self-care agencies to act in their self-care independently (Muhtar, 2013). One of them uses health education media in the form of Nursing Home Care Module which is guiding for pulmonary TB patients and their families while undergoing care and treatment (Haris, Muhtar, Ahmad, & Sentana, 2019). The aim of the study was to analyze the effect of implementing Nursing Home Care Module in improving self-care agency in pulmonary TB patients.

## **METHODS**

### **Study design**

This research using a pre-experimental study with a one group pretest-posttest design

### **Setting & Participants**

As many as 32 respondents were taken with a *purposive sampling* technique. The inclusion criteria of the respondents were that they were pulmonary tuberculosis patients both in the intensive and continuous phase, during August to November 2018. This research was conducted in two primary public health care centres in Bima City, West Nusa Tenggara, Indonesia.

### **Instrument**

This study used 2 questionnaires, namely demographic questionnaire, and self-care agency questionnaire. The questionnaire regarding the characteristics of the respondents contained age, sex, type of work, marital status and education. A questionnaire on self-care agency for pulmonary tuberculosis sufferers was developed by researchers adopting the Appraisal of Self-Care Agency Scale (Guo et al., 2017) and integrating with existing literature. This questionnaire contains questions about self-care activities of pulmonary TB patients such as conducting activities to obtain knowledge about pulmonary tuberculosis, examining the diagnosis of pulmonary tuberculosis, implementing pulmonary tuberculosis treatment programs and taking preventive measures for disease transmission and structuring the home environment consisting of 25 items question using a Likert scale. The questionnaire was filled in by selecting one of five alternative choices : Never, Rarely, Sometimes, Frequently or Very Often according to the conditions of the respondent. A score of 5 is given to choices very often for positive questions, whereas negative questions are given the opposite score. The results of the validity test there are four invalid items, namely item number 13, 14, 15 and 24 with the value of r-count respectively 0.505, 0.441, 0.385 and 0.465, while the reliability test results obtained alpha values  $> 0.7$  for all items, so that all items are considered reliable and have high internal consistency. Based on these results the researchers decided to use all 25 items of the questionnaire.

### **Intervention**

The researcher gave treatment in the form of home visit activities for three times by giving and explaining the Nursing Home Care Module which contained support and instructions for self-care which included knowledge about pulmonary tuberculosis, home care, ways to prevent transmission of pulmonary tuberculosis and structuring the home environment. This module is arranged in the form of a booklet consisting of 3 chapters covering 22 pages of the book. During the implementation of the treatment the researcher was assisted by 4 research assistants who were graduates of Nursing Diploma-III.

### **Data analysis**

Paired t-tests were used to analyze the effectiveness of the application of the Nursing Home Care Module in improving self care agency of patient with pulmonary Tuberculosis

### **Ethical consideration**

Ethical approval was obtained from the Health Research Ethics Commission, University of Mataram. The number of ethical approval was Ref : 228/UN18.8/ETIK/2018.

## RESULTS

Bima City is one of the cities in West Nusa Tenggara Province, located in the eastern part of Sumbawa Island with an area of 222.3 km<sup>2</sup> which is divided into 5 sub-districts and 38 villages with a population of 159.736 in 2016. The characteristics of families and households in the Bima city area are mostly is a large family, where one house is usually inhabited by a nuclear family together with parents of husband/wife (grandmother/grandfather), with a pattern of close relationships and social interaction between fellow family members. Characteristics of households in the study site, where the houses of pulmonary TB sufferers live are connected with a narrow yard, lack of ventilation and inadequate windows and sunlight at home.

The implementation of this study involved 32 respondents with pulmonary TB who underwent treatment in the working area of the city health office in Bima. Table 1 below presents the demographic characteristics of the study participants.

Table 1 : Characteristics of pulmonary tuberculosis sufferers in Bima City, West Nusa Tenggara, November 2018.

Characteristics	n = 32	
	Frequency	%
<b>Age</b>		
14 – 25 years old	6	18.8
26 – 35 years old	5	15.6
36 – 55 years old	11	34.4
56 – 84 years old	10	31.2
<b>Gender</b>		
Male	14	43.8
Female	18	56.2
<b>Employment</b>		
Government employees/retired	8	25.0
Private employees	2	6.3
Entrepreneur	10	31.2
Farmer	7	21.9
Student	5	15.6
<b>Marital status</b>		
Marry	24	75.0
Divorced	2	6.2
Single	6	18.8
<b>Educational background</b>		
University/ Diploma	9	28.1
Senior High School	13	40.6
Junior High School	3	9.4
Elementary School	7	21.9

Table 1 shows that the majority of respondents were in the age groups 35-55 years old (34.4%), female (56.2%) actively working as entrepreneurs (31.2% ), legally married and living with their spouse (75.0%), and with Senior High School education background (40.6%).

Table 2 : Frequency Distribution of Self-care Agency of pulmonary tuberculosis sufferers in Bima City, West Nusa Tenggara, November 2018.

Category	Pre-test (n=32)		Post-test (n=32)	
	Frequency	%	Frequency	%
Good	5	15.6	11	34.4
Enough	16	50.0	21	65.6
Less	11	34.4	0	0.0

Table 2 shows that the self-care agency of pulmonary tuberculosis patients in the majority of the pre-test results was in enough category (50.0%) and only a few in the good category (15.6%). While the post-test results showed that most respondents were in enough category (65.6%) and the rest (34.4%) were in a good category.

Table 3 : Analyze the Application of the Nursing Home Care Module in Improving Self Care Agency of Patient with Pulmonary Tuberculosis

Category	Mean	SD	Std. Error Mean	T	p-value
Pretest self-care agency	2.81	1.120			
Posttest self-care agency	3.91	0.390			
Paired t-test Sig.(2-tailed)	1.094	1.174	0.208	5.271	0.001

Table 3 shows that the value of self-care agency in the pre-test was at a mean of 2.81 with a standard deviation of 1.120 while the post-test results had a mean value of 3.91 with a standard deviation of 0.390. The paired t-test results showed the value of  $p = 0.001$  ( $p < 0.05$ ), this indicates that the research hypothesis was accepted, which means that there is an influence of the application of the Nursing Home Care Module in improving self-care agency in patients with pulmonary TB in the city of Bima.

## DISCUSSION

The Nursing Home Care Module implemented in this study has shown the potential future benefits for the community, patients with pulmonary tuberculosis involved in this study have experienced these benefits firsthand. The method implemented in this study includes providing support for self-care during treatment of pulmonary tuberculosis which consists of increasing patient knowledge about pulmonary tuberculosis through health education, self-care training at home through the simulation of the act of giving warm compresses, deep breathing exercises as well as effective cough exercises and giving instructions on how to prevent pulmonary tuberculosis through the structuring of the home environment and the manufacture of phlegm shelters, all these interventions have been carried out through home visit activities. All of these interventions are intended to improve the ability of self-care agencies by opinions (Callaghan, 2003) suggesting that the integration of activities promoting self-care behavior self-efficacy is a basic component of forming independent care agents. This is consistent with the results of other studies that social support and knowledge received along with the intensity of reading self-care manuals can improve

self-care agency (Darmansyah et al., 2013). In line with the opinion (Breiddal, 2012) that self-care skills must be realized through modeling self-awareness, self-knowledge, and self-reflection, followed by actions to find balance.

Someone who suffers from pulmonary TB disease will experience self-care deficit or dependence on others. Nurses take part by acting as educators for sufferers to maintain their optimal abilities in achieving well-being (Kusnanto, Sari, Harmayetty, Efendi, & Gunawan, 2018). The condition of self-care deficit in patients with pulmonary tuberculosis in their knowledge of pulmonary tuberculosis, long-standing TB treatment can reduce adherence to treatment programs, treatment of TB symptoms in the form of coughing and shortness of breath, regulation of high protein diets and prevention of disease transmission. The results of the study showed that the ability of the respondent's self-care agency was still in the sufficient category (table 2), inseparable from the illness condition suffered by the respondent because the self-care agency could change at any time influenced by individual health conditions (Parker & Smith, 2010). Self-care is a function of human regulating as learned behavior, which is carried out for a specific purpose (Liu, Xue, Xue, & Hou, 2018), to be able to engage in self-care activities, an individual needs to be oriented to time, health, others, events, and the surrounding environment, and have moral, ethical, and social values, special interests and concerns, and daily living habits that affect the ability of self-care (White, Peters, & Schim, 2011).

One of the determining factors for the success of TB treatment is the patient's independence in meeting their self-care needs. This independence can be achieved if people with TB have the ability in self-care (self-care agency). The interventions carried out in this study emphasize increasing the ability of patients to be able to carry out self-care. The results showed that there was an increase in the ability of self-care or self-care agency between before and after treatment as shown in table 3. The results of the pre-test self-care agency obtained an average value of 2.81 with a standard deviation of 1.12 while the post-test results showed an increase in self-care agency with a mean value of 3.91 and a standard deviation of 0.39, Paired t-test results  $p = 0.001$  ( $p < 0.05$ ), this shows that the research hypothesis is accepted, which means that there is an influence on the application of Nursing Home Care Module in improving self-care agency in pulmonary TB patients in Bima city. These results support the theory of self-care nursing developed by Dorothea Orem, where humans have the ability to care for themselves called the self-care agency (Tomey & Alligood, 2010). Furthermore, Orem said that when a person experiences limitations in self-care (deficit self-care), then someone needs help from others in fulfilling their care, one of which is from a nurse called the nursing agency.

The role of nurses as a nursing agency helps maximize the ability of pulmonary TB patients in self-care through the implementation of nursing care at home in the form of supportive-educative assistance by providing guidance and teaching using the Nursing Home Care Module media. This is in line with the findings of previous research that the application of nursing care self-care regulation model can improve the ability of self-care agency (self-care agency) by activating self-care regulation through improving patient pain interpretation, developing patient coping strategies and developing positive cognitive so that patients also have a positive appraisal ability of coping efforts that have been implemented, can accept the existing reality, steadfast, patient and can take lessons from events experienced so that they are always optimistic

that they will achieve the desired goals (Suhardingsih, Mahfoed, Hargono, & Nursalam, 2012).

Self-care agencies can be studied and directed at the specific behavioral performance that can lead to improved health (Muhtar, 2013). Specific behavior, in this case, includes self-care behavior while undergoing treatment for illnesses such as pulmonary TB treatment which usually lasts 6-9 months. The nursing system includes the design and implementation of plans that bridge the identified gap between the action requirements needed for the regulation of life, health, and well-being and the limitations of the individual in being able to complete the actions needed (Cox & Taylor, 2005). The act of bridging the gap in this study was carried out by researchers in order to improve the ability of the self-care agency of pulmonary TB patients to self-care that was identified as part of efforts to treat and treat pulmonary TB disease that suffered.

Based on the results of the study, it can be seen that there is an effect of the application of the Nursing Home Care Module to the improvement of the self-care agency of TB lung sufferers, however this study also has weaknesses in terms of the design used. For this reason, the researchers hope that in the future similar research will be developed using appropriate methods by involving the control group in addition to the treatment group and a larger sample size so that biased results can be avoided.

## CONCLUSION

There is an effect of implementing Nursing Home Care Module in improving self-care agency in patients with pulmonary TB. The ability of the self-care agency of pulmonary tuberculosis patients who experienced an increase in this study included knowledge of pulmonary tuberculosis, treatment of TB symptoms in the form of coughing and shortness of breath, regulation of diet, prevention of transmission and adherence to treatment programs. Further research is suggested to be able to explore various nursing interventions that can improve patient self-care abilities and the success of pulmonary TB treatment through teaching, guiding and supporting activities using various health education media.

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