The impact of family resilience interventions on individual beliefs and medication adherence in pulmonary TB patients

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Abstract---Background: Family resilience has a role in maintaining a balance between stress and optimism as well as family strength. In this case, it is expected that family resilience can increase family independence in taking care for family members suffering from pulmonary TB thus the patients eventually have good belief to adhere to the treatment process. Furthermore, the purpose of this study was to determine the effect of family resilience interventions on belief and adherence to treatment of patients with pulmonary TB. Research method: This research applied a quasi-experimental research design involving 60 respondents suffering from pulmonary TB as the research samples. These samples were selected randomly in the Surabaya area. Meanwhile, the independent variables studied in this study were the

intervention of family resilience, while the dependent variables are the individual beliefs and medication adherence. Furthermore, the research instrument used to collect the data was an intervention module and a modified questionnaire. After obtaining the data, they were analyzed using paired t-test, Wilcoxon test, and Mann Whitney with a significance of P of less than 0.05. The results: this research found that the family resilience intervention model on pulmonary TB patients had a significant effect on the patient's self-confidence with a p-value of 0.001 (p<0.05), and adherence to pulmonary TB treatment with a p-value of 0.001 (p<0.05). Conclusion: Family resilience intervention affects confidence and adherence to treatment of pulmonary TB patients. Based on the results of the study, suggestion proposed is that interventions to increase family resilience are needed as a support system for pulmonary TB patients to completely carry out the pulmonary TB treatment program.

Introduction

Families have an important role in maintaining patients' optimal health in dealing with disease (Samal, 2016). Most people with pulmonary TB have poor social support and compliance systems (Prakash Chandra, Sangita Singh, 2011). Family social support is a consideration in giving special attention to the daily routine of pulmonary TB patients (Kaulagekar-nagarkar, Aarti, 2012), especially on medication adherence. Many patients do not comply with the treatment because of the length of the treatment and the many types of drugs, so that germs become resistant and the treatment must be repeated. In this case, the role of the patient's family in the preventive effort needs to be optimized. The family plays a role in case finding and as a Drug Swallowing Supervisor (PMO). However, family involvement in health promotion, transmission prevention, and treatment efforts has not been seen in pulmonary TB control activities. Whereas, problems with pulmonary TB patients affect the families, hence family unpreparedness, lack of family knowledge about TB, and the impact of discrimination (stigma) are factors that need to be considered. The family system is designed to maintain stability, thus changes in one family member can affect all families (Joanna Rowe Kaakinen et al, 2015). In this case, family resilience plays a role in maintaining a balance between stress, optimism, and family strength. In addition, family resilience is also expected to be able to increase family independence in taking care of the family members who are pulmonary TB patients who eventually could have a support system in order to comply with the treatment process.

TB is the ninth leading cause of death in the world. It was estimated that 10.4 million people suffered from TB in 2016 of which 90% were adults, 65% were men, 10% were people living with HIV (74% in Africa), and 56% lived in five countries, including India, Indonesia, China, Philippines, and Pakistan (WHO, 2017). TB is a disease that causes death from a single infectious cause above HIV/AIDS. Furthermore, based on the Global Burden of Disease study, TB is the

second leading cause of death in the world. In addition, WHO Global Tuberculosis Report in 2017 issued data that revealed Indonesia as the third country with the highest TB sufferers in the world. In this case, Surabaya is the second largest city in Indonesia where that had 2,330 new pulmonary TB cases in 2015 with the BTA + recovery rate was 70.43% and the success rate of the treatment was 79.21% (Department of Health, 2015). In the following year, the Department of Health of Surabaya City revealed that the total number of Tuberculosis patients in the Surabaya city area was 5,389 patients, of which 3,421 patients were reported by 63 Public Health Centers and 1,968 patients were reported by 33 public and private hospitals in the Surabaya City area. In this case, the SITT online data source version 10.04 that among 5389 patients found, 358 (6.64%) patients were Drop Out (DO) cases, 2016 (37.41 %) patients recovered, 2657 (49.3%) had complete treatment, 188 (3.5%) died, 116 (2.15%) patients moved, and 54 (1%) patients were reported as failure.

Previous research has shown that family caregivers often did not prepare anything to provide care, had insufficient knowledge to provide appropriate care, and received little guidance from formal health care providers during chronic conditions. In addition, in the case of TB, there is a misunderstanding in the family and society that leads to disease discrimination (Kaulagekar-nagarkar, Dhake, & Jha, 2012). The discrimination felt at the beginning of diagnosis is one of the causes of depression (Li-Yun Lee, Heng-Hsin Tung, Shu-Ching Chen, 2017). Families with family members suffering from pulmonary tuberculosis are often faced with conditions that cause stress, including psychosocial problems such as loss of hope, sleep disorders, and rest disorders (Prakash Chandra, Sangita Singh, 2011). Therefore, the incidence of depression can also occur in TB patients (Shen et al., 2014).

The role of families of TB sufferers in TB control efforts still needs to be optimized. Related to this, family involvement in TB control efforts is needed for TB case finding and as Drug Swallowing Supervisors (PMO). However, family involvement in health promotion efforts, transmission prevention, and care has not been shown in activities TB control. Whereas, the family plays an important role in taking care of sick family members, and one of the functions of the family is maintaining the health of the family members (Friedman, 2014). As a group, family can cause, prevent, ignore, or improve health problems in the group. Health problems in the family are interrelated, where if one member is sick, it will affect other family members and will also affect the community.

Method

Current research was carried out using a quasi-experimental research design by involving 60 respondents suffering from pulmonary TB disease as the research samples. These respondents were collected in the Surabaya area and further were divided into two groups, namely 30 respondents for the intervention group and 30 respondents for the control group. In this case, the independent variable studied was the intervention of family resilience, while the dependent variables studied were individual beliefs and medication adherence. Furthermore, the data were collected using instruments in the forms of intervention module, a modified belief perception questionnaire, and a modified adherence questionnaire from the

Morisky Medication Adherence Scale questionnaire. All instruments have been tested for validity and reliability. In this case, the validity of the individual belief instrument obtained a coefficient value of 0.679 - 0.971 in which the correlation coefficient value is greater than r table (> 0.361), while its reliability test obtained Cronbach's alpha of 0.809 (> 0.6). Furthermore, the validity test of the compliance instrument obtained coefficient values between 0.439 – 0.747, greater than r table (> 0.361), while its reliability test obtained Cronbach's alpha of 0.723 (> 0.6). The data were analyzed using the paired t-test, Wilcoxon, and Mann Whitney tests with P<0.05 significance. In addition, the research conducted has passed the ethical test of the Health Research Ethics Commission, Faculty of Nursing, Universitas Airlangga with certificate number 1750-KEPK.

Results

Demographic data of the respondents

Characteristics of research respondents, in this case are the pulmonary TB patients, are described in the following table:

Table 1. Characteristics of Respondents with pulmonary TB in Surabaya, August to December 2021 (n treatment group = 30, n control group = 30)

No	Characteristics	Treatment Group		Control Group		Equivalence Test (Chi-Square)
		F	%	f	%	
1	Age					0.796
	a. < 20 years	1	3.3	2	6.7	
	b. 21 – 35 years old	10	33.3	7	23.3	
	c. 36 – 45 years old	8	26.7	6	20.0	
	d. 46 – 60 years old	5	16.7	9	30.0	
	e. > 60 years old	6	20.0	6	20.0	
2	Gender					0.682
	a. Male	15	50.0	14	46.7	
	b. Female	15	50.0	16	53.3	
3	Education					0.994
	a. Did not go to school/ did not pass the Elementary School (SD)	1	3.3	1	3.3	
	b. Graduated from basic education (SD – SMP)	11	36.7	10	33.3	
	c. Graduated from Secondary Education (SMA)	14	46.7	15	50.0	
	d. Graduated from Higher Education (PT)	4	13.3	4	13.3	
4	Occupation					0.167
	a. Housewife	6	20.0	8	26.7	
	b. Entrepreneur	11	36.7	10	33.3	
	c. Civil	3	10.0	0	0	
	Servant/Army/Police	3	10.0	0	0	

No	Characteristics	Treatment Group		Control Group		Equivalence Test (Chi-Square)
		F	%	f	%	
	d. Labor	4	13.3	8	26.7	
	e. Unemployed	3	10.0	4	13.3	
	f. Private sector employee/ others					
5	Position in a Family member					0.506
	a. Husband	15	50.0	11	36.7	
	b. Wife	10	33.3	9	30.0	
	c. Child	4	13.3	8	26.7	
	d. Other Member of Family	1	3.3	2	6.7	

Table 1 describes the characteristics of respondents from both the treatment group and the control group. In terms of the age, the respondents of the treatment group were mostly at the age category of 21-35 years old by 10 people (33.3%), while the respondents of the control group were mostly at the age category of 46-60 years old by 9 people (30%). Concerning the gender, the respondents of the treatment group had the same number of male and female respondents of 15 respondents (50%), while the respondents in the control group were mostly female by 16 people (53.3%). In the education category, respondents in the treatment group mostly graduated from secondary education (SMA/SMU) by 14 people (46.7%), while the respondents of the control group control mostly graduated from Secondary Education (SMA) by 15 people (50%) .

Furthermore, in the occupation category, the respondents of both treatment group and control group were mostly entrepreneur by 11 people (36.7%) in the treatment group and 10 people (33.3%) in the control group. Last, concerning the category of position in the family, most of the respondents of both treatment and control groups were the husband by 15 people (50%) in the treatment group and 11 people (36.7%) in the control group. In this case, the equivalence test value between 2 groups showed p value of more than 0.05 so it is concluded that both group have equality.

Effect of the Intervention of Family Resilience on the Individual Belief and Compliance Treatment of Pulmonary TB patient

Before the data analysis was carried out to test the effect, the normality and homogeneity of the data were tested. In this case, the normality of the research data was tested using the Kolmogorov Smirnov test, obtaining the p-value of individual belief variable of more than 0.05. This indicates that the data were normally distributed, Meanwhile, the compliance variable had a p value of less than 0.05, indicating that the data were not normally distributed. Furthermore, after performing the data normality test on the individual belief variable of pulmonary TB patients, an analysis was carried out to test the pre-and post value in each control group and treatment group using the *Paired T-Test* (Test in pairs). Analysis of the post-test value of the control group was also carried out by applying the *Independent T-Test*, while the data on treatment compliance was analyzed using the Wilcoxon signed Reank Test and Mann Whitney Test.

In addition, the individual belief variable of pulmonary TB patients was also tested regarding its homogeneity using One Way Anova. The results of the homogeneity test showed result of more than 0.05, indicating that the individual belief variable in both treatment and control group had homogeneous variants.

a. Analysis Result of the Effect of Intervention of Family Resilience Module on Individual Belief in Pulmonary TB Patients

Table 2 Results of Individual Belief Testing in Family Resilience as an Effort to Improve Treatment Compliance in Pulmonary TB Patients in Surabaya in the Treatment Group and Control Group (each n=30)

Group	Medication Adherence		p
	Pre-Test	Post Test	
	$\overline{x} \pm$ SD	$\overline{x} \pm$ SD	
Treatment	55.10 ± 15.98	73.33 ± 13.05	0.001 [b]
Control	58.90 ± 13.84	61.57 ± 12.79	0.035 [b]
P	0.329 [a]	0.001 [a]	

Description: [a] *Independent T-Test* . [b] *paired t-test*

Table 2 shows that the results of the Individual Belief test of TB patients before and after the intervention showed that the mean value of all groups experienced a change. In this case, the results of the *paired t-test* showed that the treatment group had a p-value of 0.001, showing that the p value is less that 0.05, indicating that there were differences in the *individual beliefs of* TB patients before and after the intervention. Meanwhile, the p-value obtained from the control group was 0.035 showing that the p value is less than 0.05. It indicates that there were differences in the level of family resilience in the control group.

Furthermore, Table 2 also shows that the pretest results of the Individual Belief assessment of patients in both control and treatment groups using the *independent t-test test* obtained a p-value of 0.329 meaning that the p-value is more than 0.05. Therefore, it can be concluded that there was no difference on the individual Belief of Pulmonary TB patients between before and after the family received intervention in the application of family resilience model. Meanwhile, the posttest value of both control and treatment groups obtained p-value of 0.001 meaning that the p-value is less than 0.05. Thus, it was concluded that there were differences in Individual Belief of Pulmonary TB Patients after the family received an intervention in the application of the family resilience model.

b. Analysis Result of the Effect of Family Resilience Module Intervention on Treatment Compliance in Pulmonary TB Patients

Table 3 Results of Treatment Compliance Testing in Pulmonary TB Patients in the Family Resilience as an Effort to Improve Treatment Compliance of Pulmonary TB Patients in Surabaya in the Treatment Group and Control Group (each n=30)

Group	Treatment Compliance of Pulmonary TB Patients		
	Pre-Test	Post Test	p
	$\overline{x}\pm$ SD	$\overline{x}\pm$ SD	
Treatment	13.77 ± 2.62	17.60 ± 0.77	0.001 [b]
Control	13.70 ± 2.53	14.20 ± 1.82	0.121 [b]
P	0.731 [a]	0.001 [a]	

Description: [a] *man whitney* . [b] *wilcoxon signed rank test*

Table 3 shows that the results of treatment compliance test of TB patients before and after the intervention in the treatment group through the Wilcoxon signed rank test obtained a p-value of 0.001 meaning that the p value is less than 0.05. Therefore, it can be concluded that there were differences in treatment compliance of TB patients before and after the intervention was given. Meanwhile, the control group obtained p-value of 0.121 meaning that the p-value is more than 0.05. It indicates that there was no difference in treatment compliance in the control group.

Furthermore, Table 3 also shows that the results of treatment compliance test of patients in the control group and treatment group, in the pretest value of the control and treatment group through the *Mann Whitney test* obtained a p-value of 0.731, thus the p value is more than 0.05. Therefore, it can be concluded that there was no difference in treatment compliance. Pulmonary TB patients before being given an intervention applying the family resilience model. Meanwhile, in the posttest value of the control group and the treatment group, the results obtained p-value of 0.001 meaning that the o value is less than 0.05. Therefore, it can be concluded that there were differences in treatment compliance of pulmonary TB patients after the family received an intervention in the forms of the application of the family resilience model.

Discussion

Effect of Family Resilience Intervention on Individual Belief of Pulmonary TB patients

The results on the analysis of Individual Belief test of TB patients obtained that there were no differences found between the control and treatment groups before the intervention of the implementation of the family resilience model. Meanwhile, after the family received the intervention in the application of the family resilience model, there were differences found in the *Individual Belief* of Pulmonary TB patients, shown in the posttest score. Perceived vulnerability refers to belief about the possibility in getting disease or certain condition. An example for this condition is that when a family member in the family suffer from pulmonary TB, shown by the signs and symptoms, the whole family member also has the vulnerability to be infected have signs and symptoms of pulmonary TB. Meanwhile, perceived severity is the feeling about seriousness of the infectious disease or letting no treatment including medical and clinical evaluation

consequence (e.g. death, disability, and pain) and social possible consequences (e.g. effect from conditions at work, family life, and social relationships). In this case, both perceived vulnerability and severity are combined and labeled as perceived threat. The perceived benefit, which is when somebody feel vulnerable personally to serious condition health (perceived threat), will lead to behavioral changes that are affected by individual belief about the perceived benefits from various available actions in order to reduce the disease threat.

Another perception that is not related with health, such as financial savings related with smoking that was done by a family member, can also affect behavioral decision. Therefore, individuals who strongly belief in vulnerability and severity is not expected to accept health recommendation action, except they also think that the action given is beneficial to reduce threat. Perceived Barrier is the negative potential aspect of certain health action or obstacle for recommended behavior. Analysis on the cost-benefit that is not realized happens where the individual weigh expected benefits from the perceived barrier action. This can help the patients, but may be expensive, have negative side effect, no fun, no comfortable, or spend much time. Therefore, the combination level of vulnerability and severity give energy or strength for act and perceived benefits (minus obstacle) as well as track preferred course of action (Rosenstock, 1974).

Behavioral instruction, including signal draft can trigger action. Hochbaum (1958), for example, thinks that readiness to take actions (perceived vulnerability and perceived benefit) only could reinforced by other factors, especially by cues for trigger actions, such as for returned pulmonary TB patient productivity so that they can go out from adversity quickly. Gesture for act yet studied systematically. Indeed, although action cue draft triggers interesting mechanism, action cue is difficult to be studied in survey explanation. Self-efficacy is defined as "belief" that somebody could succeed doing required behavior and producing results" (Bandura, 1997). Bandura distinguishes self-efficacy from the expected result, which is further defined as personal belief estimation that certain behavior will leads to certain results.

Expectation has similar results but still different from HBM concept of perceived benefits. In 1988, Rosenstock, Strecher, and Becker suggested that self-efficacy is added to HBM as construction apart, temporarily enter the original draft of perceived vulnerabilities, severity, benefits, and barriers. Self-efficacy is not explicitly entered the early formulation of HBM. The original model has been developed in the context of limited health preventive action (received results of sputum inspection in pulmonary TB patient who have sign and symptoms after intensive treatment for 2 months) when no complex behavior is involved.

Self-efficacy is the estimation of someone's ability in implementing and managing the required action to complete problem or reach certain goal. Self-efficacy is one factor key in the implementation of personal control, including control on the public health (Sedjati, 2013). Individuals who have high self-efficacy will have the belief to recover. TB patients with high self-efficacy also have awareness for regularly consuming the drugs needed and maintaining healthy daily habits (Noorratri, Margawati, & Dwidiyanti, 2016). Besides, self- efficacy also contributes in giving benefits to motivation level and performance achievement. Individual

who has good self-efficacy will focus on the opportunities that exist in their life, even when they live in the neighborhood with limited opportunity, they believe that problems and obstacles can be overcome (Zlatanović, 2016).

Sufferer must have high self-efficacy so that they comply with the drugs consumption and achieved recovery. Supervisory Medication (PMO) role is not enough when the patient itself does not belief to recover from the disease suffered. In this case, when patient has low self-efficacy, it will cause to treatment failure (Hendiani, Sakti, & Widayanti, 2014). The amount of respondents who have good self-efficacy is more than the amount of respondents who have poor self-efficacy. This is in line with the previous research, that the existence of encouragement from the TB patients themselves can lead to personal belief of the patient recovery which further leads to successful recovery (Sedjati, 2013). In this case, the development of self-efficacy is determined by the successes and failures that have been done as well as the error in self-evaluation. When during the daily life someone always consider himself to have bad appearance, then he will also have low self-efficacy. On the other hand, when someone always experienced failure cut still continuously trying to increase performance, the self- efficacy will also increase.

Various past experiences determine the self-efficacy through cognitive representation, which includes; memory to the frequency of success and failure, pattern temporary, and how the success and failure occur (Permana, Harahap, & Astuti, 2016). Self-efficacy could be further acquired, studied, and developed from 4 (four) information sources. Basically, the fourth source is the stimulation or events that can give inspiration or generate positivity for the attempted effort. As for the sources of self-efficacy, they are perceived results, which are the most influential information source because it has the capability to give the most obvious evidence about someone ability to reach success and experience that is obtained through social models . In this case, self-efficacy will increase when we observe the success of others. On the contrary, self-efficacy will decrease if we observe someone (figure) who has similar ability with our self. In addition, the other sources of self-efficacy is social persuasion which can give, strengthen, or weakened the self-efficacy.

Although the impact of social persuasion to the self-efficacy is limited yet under the right conditions, peoples' persuasion can definitely affect the self-efficacy. When someone in a condition where he trusts the others who give persuasion, his self-efficacy will be affected. Meanwhile, strong emotions such as fear, anxiety, and stress can reduce self-efficacy. However the condition where excessive emotion can increase self-efficacy can also occur (Mahmudi & Suroso, 2014). Undergoing a long-term treatment will affect the patients' compliance so the health officer can know the patient behavior and attitude to the treatment program that has been provided (Dewi, Nursiswati, & Ridwan, 2009).

In this case, the role of health officer or TB clinic manager becomes very important in building the self-efficacy self through various thing. One of them is through the family empowerment family. Interventions given by the health officers from Public health center using family resilience module becomes an effort to increase the belief of family members' suffering from pulmonary TB. On the

module provided, the nurses involve will conduct home visit and provide nursing care in the forms of intervention of resilience promotion with the goal that the family achieved resilience so they can give support to pulmonary TB patient. It further will increase the belief of pulmonary TB patient for complying with the treatment program.

Effect of Intervention of Family Resilience against the Treatment Compliance in Pulmonary TB patient

The results of testing the treatment compliance of TB patients before and after the intervention in the treatment group showed the conclusion that there were differences in the treatment compliance of TB patients before and after the intervention was given. In the control group, it can be concluded that there was no difference in the treatment compliance in the control group. Meanwhile, the results of the assessment of treatment compliance of patients in both control group and treatment group, particularly on the pretest value of the control group and the pretest value of the treatment group, it can be concluded that there was no difference in treatment compliance of pulmonary TB patients before being given the intervention of implementing the family resilience model. Meanwhile, in the posttest scores of the control group and the treatment group, it can be concluded that there were differences in treatment compliance of pulmonary TB patients after the family received the intervention of implementing the family resilience model.

According to Lietz & Strength (2016) in Rachmawati (2019), family resilience is expected to be able to increase family independence in taking care of the family member who is suffering from TB with the expectation that the patient will have support system from the family during the treatment process. Family resilience has 5 stages. The first stage is life continuity (survival), the second stage is the family adaptation to the problems occur, the third stage is where the family start accept the family problems and conditions, the fourth stage is where the family becomes stronger because they have experiences in handling the problem, and the fifth stage is where the family could help others who are facing similar thing or problem (Rachmawati et al., 2020). The main key of the family resilience is the interaction synergy between the family members, for example the trust system, organizational process, and communication process. In this case, positive view can be facilitated and supported by the success in solving problem and proactive stages (Walsh, 2007).

The family resilience model-based nursing care development is conducted through 5 therapy meeting, where the first meeting was conducted to explain the intention and purpose, asking for the family agreement and contract as well as doing family assessment by exploring the family stressors, stress levels of pulmonary TB patients, family stress and coping, the family function implementation, and the family resilience position. The second meeting was conducted by identifying the family problem of pulmonary TB patient as well as arranging action plan to resolve problem and improve family resilience so that the family is capable in doing the healthcare function for the family member with pulmonary TB. In this case, the results criteria is that the family is capable to adapt and function by

positive increase after family experience crisis as the impact of one member family suffering from pulmonary TB.

The third meeting is carried out by providing education about Pulmonary TB disease and patients' treatment program, building commitment with TB patients, and providing education on the role of the PMO from one of the family member, stimulating the family to be able to conduct healthcare function for the family member with pulmonary TB namely: 1) stimulating the family awareness or reception about the health problems and needs by providing information, identifying the needs and expectations about health and encouragement attitude as well as the healthy emotions towards the problems; 2) Stimulating the family to decide proper healthcare method by identifying the consequence when no action done, identifying the family resources, and discussing the consequences of each action to be done; 3) Building self-trust in taking care of the sick family member by demonstrating the care method using tools and facilities at home, supervising the family to conduct healthcare; 4) Helping the family to find method how make a healthy environment by finding the available sources and changing the environment with optimal possible, and 5) Motivating the family to utilize the existing health facility by introducing health facility in the environment and helping the family to use the existing health facility.

The fourth meeting is providing intervention in the form of resilience promotion by strengthening and protecting the factor or source to be used family in dealing with stressors with action taken namely: 1) Providing family support and involvement in the Treatment Program of Pulmonary TB patients; 2) Developing family routines and traditions (eg : wearing masks, cough and throwing phlegm etiquette, washing hand in 5 steps, consuming nutritious food, and working together in cleaning the house cleanliness house; 3) Convincing that family is the sources and support, 4) Facilitating the family assertive communication; 5) Involving the family in the activity care of pulmonary TB patient by being the PMO for patients, 6) Agreeing on the general family/ community behavioral model; 7) Involving the family in the pulmonary TB treatment program (TB TOSS Program: Finding Treatment Until the Recovery of the Tuberculosis Disease), 8) Facilitating the development and use of the environment as the main power source in Pulmonary TB care and treatment, 9) Motivating the family to achieve positive health behavior positive health; and 10) Motivating the family to develop self-trust.

Fifth meeting is evaluating the criteria set for the results of the family ability in doing the health care for the member family with pulmonary TB as well as evaluating the compliance of pulmonary TB patient in participating in a treatment program. Research results showed that the intervention conducted to the family affect the family in conducting their function in taking care the family member suffering from pulmonary TB and increasing the family resilience in facing crisis in family, which further resulted in the pulmonary TB patient who has good individual belief and increased treatment compliance.

Research results also showed that the increased family resilience also have more results, which are good treatment compliance, compared to the initial pulmonary TB patients compliance. Family member who plays an active role in the treatment program of pulmonary TB patient by increasing the family ability in dealing with

the internal stressors of family through the development of the ability to complete problem and use proper coping, is capable to increase the family resilience in facing crisis when one family member is diagnosed with pulmonary TB. Health facilities that provide service to pulmonary TB patient further expected that the family involvement in the treatment program of Pulmonary TB patients could increase the family resilience, thus the family is capable in taking role and function of taking care of pulmonary TB patients. In addition, the intervention in the forms of family resilience will also increase the belief of pulmonary TB patient in participating completely in the treatment program.

Conclusion

Intervention of Family Resilience is implemented through 5 home visits to the pulmonary TB patient. This intervention is capable to increase the individual belief and capable to increase the treatment compliance pulmonary TB patient patients in Surabaya area.

Suggestion

1. The involvement of health workers in the intervention should become the key success of the treatment of Pulmonary TB patients. In addition, building the trust through the interaction between the health officer and family member is also required in the intervention provided to support the success of the treatment of pulmonary TB patients.
2. Research results also showed that the increase of family resilience have more results in the forms of good treatment compliance, because the intervention which is in the form of family nursing care through home visit is required in the treatment program of pulmonary TB patients. Intervention for increasing the family resilience is conducted until the family is independent in taking care and maintaining the heath of the family members with pulmonary TB.

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