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EFFECT OF SPIRITUAL BASED MINDFULLNESS INTERVENTION ON EMOTIONAL CONTROL IN ADULT PATIENTS WITH PULMONARY TUBERCULOSIS

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Abstract
Background: Emotions have an impact on the healing process as it affects the body's defense system. The work that can be done to control the emotions of pulmonary TB patients is mindfulness with a spiritual approach.
Objective: To examine the effect of spiritual based mindfulness intervention on the emotional control in adult patients with pulmonary TB.
Methods: This was a pre-experimental study with one group pre-post test design with a total of 45 adult patients with pulmonary TB recruited purposively in the public health centers. A questionnaire of emotional regulation was used for data analysis. Paired t-test was used for data analsyis.
Results: This study showed that there was a significant difference in emotional control between before and after given spiritual based mindfulness intervention with p = 0.000 (<0.05).
Conclusion: The spiritual based mindfulness intervention has a significant effect to improve the emotional control of adult patients with pulmonary TB. This can be used as one of the efforts to control the emotions of pulmonary TB patients as well as as to speed the healing process.

Keywords: Mindfulness, spiritual approach, emotional control, pulmonary tuberculosis

INTRODUCTION

TB cases are still one of the world public health problems despite control efforts with the DOTS strategy have been implemented in many countries since 1995 (MOH, 2015b). The World Health Organization (WHO) reports that 9.6 million people have fallen ill with tuberculosis cases and 63 % with smear positive (WHO, 2015). TB cases in Indonesia continue to increase and become the country with the second highest TB cases after India (MOH, 2015a). TB infects many productive ages and increases mortality rates in communities, especially in developing countries (Wijaya, 2012). The case of pulmonary TB deaths in Indonesia in 2013 was 25 cases in 100,000 and increased in 2014 to 41 cases in 100,000 people. The success of pulmonary tuberculosis patients treatment in Indonesia in 2015 amounted to 85% but decreased from the previous 6 years (2008-2014) above 90% (MOH, 2015a). One of the causes of treatment failure is patients

withdrawal. Causes of drug withdrawal are also caused by physical problems (large drug size, large doses of drugs, and frequent coughing) and psychological problems (anxiety, stress and depression) (Tola et al., 2015).

The psychological problem that is commonly found in pulmonary TB patients is the lack of ability to control negative emotions. The negative emotional reactions that are often expressed are unable to accept, deny, feel annoyed, worry, cry, fear death and suicide (Xavier & Peixoto, 2015). Patients with pulmonary TB who can not control their emotions are less able to adapt to their illness and affect self-care behavior (Rajeswari, Muniyandi, Balasubramanian, & Narayanan, 2005). The results showed that patients with pulmonary tuberculosis who experienced emotional disturbance by 44% and at risk of emotional mental disorder of 2.8 times higher (Tola et al., 2015). The results of this study is supported by a preliminary study conducted by the researchers in 24 patients with pulmonary TB at Public Health Center of Kopeta, Beru and Wolomarang located in Sikka Regency of East Nusa Tenggara Province, which indicated that 8 patients said they were worried about the illness, 12 patients said they were anxious and desperate because of the long treatment, and 4 patients were stressed out of work. Self control for patients with pulmonary tuberculosis undergoing treatment needs to be done in order to reduce the impact of emotional stress so as not to aggravate the patient's condition (Janowski, Kurpas, Kusz, Mroczek, & Jedynak, 2014; Tola et al., 2015). One community health care effort in the community is to increase individual health efforts by empowering patients to take care of themselves (Efendi & Makhfudli, 2009).

Nurses as health workers have a role to provide a comprehensive service one of which is the emotional support to overcome the psychological problems of patients during illness by providing a nursing action (Chalco et al., 2006). The action aims to reduce the level of psychological and psychological tension due to stressors that suppress and replace it with a relaxed state and calm (Safaria & Saputra, 2009). One of the nursing actions that can be given to control the emotions of pulmonary tuberculosis patients is mindfulness with a spiritual approach. Mindfulness with a spiritual approach is done by using "STOP" techniques that pause from what is thought, deep breath, focus attention on the current experience associated with emotion, prayer and sincerity (Kar, Ling, & Chong, 2014).

Previous studies have suggested that mindfulness with an effective spiritual approach improves psychological wellbeing in patients with type 2 diabetes, reduces stress in mental health care and improves body defense in HIV patients (Creswell, Myers, Cole, & Irwin, 2009; Jayanti & Lestari, 2016; Lam, 2014). At the time of mindfulness, nervous system activity is developed by stimulating the amygdala. The mechanism of amygdala work is by lowering the production of cortisol hormones that trigger anxiety and reduce stress reactions to the point of zero so that one can control his/her emotions, foster positive emotional response and effective coping. Theoretically, decreased cortisol will be followed by increased immunologic body resistance so as to speed the recovery of the patient (Mayo, 2010; Sholeh, 2006). The purpose of this study was to examine the effect of spiritual based mindfulness intervention on the emotional control in adult patients with pulmonary TB in the community.

METHODS

Study design

This was a pre-experimental study with one group pre-post test design.

Research subject

A total of 45 adult patients with pulmonary TB were recruited purposively from four public health center, namely public health center of Wolomarang, Kopeta, Beru and Waipare located in Sikka Regency East Nusa

Tenggara Province. The inclusion criteria of the sample were patients with BTA-positive pulmonary TB or based on radiology examination results, with category 1 and 2, who came for treatment at public health center, aged 15-60 years, and without HIV.

Instrument

The emotion regulation questionnaire by Gross was used (Gross & John, 2003). The questionnaire consists of 10 questions, which its dimensions measured in this study include two different aspects of the respondent's emotional life. The first question concerns the emotional experience or what is felt within the self. (e.g when I am faced with a stressful situation, I try to think about it calmly). The second question relates to the emotional expression (e.g when I feel negative emotions such as angry, I make sure I do not reveal them). This questionnaire was used to measure the emotional control of adult patients with pulmonary TB. The scale used was interval to assess the mean value of emotional control before and after the mindfulness intervention with the spiritual approach. The questionnaire has been translated into Indonesian language and tested for the validity and reliability, with cronbach alpha of 0.873.

Intervention

The spiritual based mindfulness intervention was done 2 times a week for 5 weeks at the public health centers and continued by the respondent at home every day for 5 weeks with 10 minutes of therapy duration. This intervention was done by the researchers themselves who have been trained by the miracle team of caring (MOC) of nursing faculty of Undip. Observation of mindfulness with the spiritual approach of patients at home was done by the selected drug supervisor (PMO) and has followed the training given by the researcher. The spiritual based mindfulness intervention in this research was conducted using STOP technique (Kar et al., 2014). S - Stop taking a meditative attitude by sitting cross-legged, straighting body and palming above your thighs and facing upwards, closing your eyes, and pausing for a moment from what you think. T - Take deep & mindful breaths relaxation by taking a breath is slowly held for 10 seconds and then exhaled slowly, repeated 3 times, regulating the breath and feeling flowing to the chest, saying in the heart "Breathe in" while inhaling and "Release" when exhaling to help to concentrate. O - Observe the present moment. Focusing on the current state of emotions and feelings, observing or reflecting on myself who is very weak and only by the strength of Lord to become strong, "I will use God's power to achieve my great ideals." P - Proceed with a smile (process). Continue with prayer according to the religion of the lung tuberculosis patient (e.g Islam with istighfar, and Christian with prayer of surrender), take a deep breath and breathe out while saying happy expression (I am sincere, I am healthy, I am happy).

Data analysis

Data of the spiritual based mindfulness intervention was normally distributed, with Shapiro Wilk result of <0.05. So, paired-t-test was used for data analysis.

Ethical consideration

All respondents in this study have obtained an explanation of the purpose and benefits of the study. Explanations were given orally and in writing. This research has been ethically approved by the Medical Research Ethics Commission of Medical Faculty of Diponegoro University and dr. Kariadi Semarang with number 339 / EC / FK-RSDK / VI / 2017.

RESULTS

Table 1 shows that the majority of the characteristics of respondents were in the group age of 46-60 years (40%), male (64.4%) and had low level of education (57.8%).

Table 1 Characteristics of respondents based on age, gender, and education (n=45)

Characteristics	Frequency	Percent	Valid Percent	Cumulative Percent
Age				
15-25 years	10	22.2	22.2	22.2
26-45 years	17	37.8	37.8	60.0
46-60 years	18	40.0	40.0	100.0
Gender				
Female	16	35.6	35.6	35.6
Male	29	64.4	64.4	100.0
Education				
Low	26	57.8	57.8	57.8
Middle	15	33.3	33.3	91.1
High	4	8.9	8.9	100.0

Tabel 2 Effect of mindfullness with spiritual approach on emotional control using paired t-test

Emotional control	n	mean±SD	Mean difference ±SD	CI 95%	p
Pretest	45	24.49±2.69	9.17±1.40	8.75 - 9.59	0.000
Posttest	45	33.67±2.22			

Table 2 shows that the mean of emotional control before intervention was 24.49 and increased to 33.67 after intervention. Paired t-test obtained p-value 0.000 (<0.05), which indicated that there was a significant effect of mindfullness with spiritual approach on emotional control.

DISCUSSION

Most respondents were at the age of 46-60 years (40%), which is in line with the Indonesian health profile data in 2016 states that the most populations who suffer from pulmonary TB are at the age of 45-54 years (19.82%) (MOH, 2015a). The group age of 46-60 years is vulnerable because at this age there is a decrease in the immune system that the body is so easily exposed to mycobacterium tuberculosis. Previous study shows that there is a correlation between age and pulmonary TB i.e. the decrease of T-lymphocytes (85%) and 22% of respondents aged 50-59 years (Sahal, Afghani, & Nilapsari, 2014).

Most of the respondents were male (64.4%). This is consistent with a previous study indicated that most men have a smoking habit compared to women (Flandorfer, Wegner, & Buber, 2010). Active smokers are at higher risk of infected by micobacterium tuberculosis compared with people who do not smoke. Another study revealed that there was a strong relationship between smoking with the incidence of pulmonary TB with p-value of 0.001 (Lalombo, Palandeng, & Kallo, 2015). It could said that TB is often associated with lifestyle such as smoking and drinking alcoholic beverages that affect the immune system. The result of this research was supported by previous study indicated that the percentage of males is higher than the percentage of females with pulmonary TB.

Additionally, the majority of respondents had a low level of education (57.8%) (Kurniasari & Cahyo, 2012). The results of this study were in accordance with previous research states most of the pulmonary TB patients had a elementary level of educational background, or even they did not complete elementary schools (Girsang & Tobing, 2010). However,

educational background of respondents has a close relationship with knowledge and public awareness in the behavior of lung tuberculosis prevention. Another study shows that people with low education have a risk of pulmonary TB disease 2 times higher than those with high education (Nurjana, 2015).

Finding of this study revealed that there was a significant increase of the mean of emotional control after given intervention, from 29.75 to 36.99. The midnfullness intervention with spiritual approach has a significant effect on emotional control in adult patients with pulmonary TB. The results were consistent with the suggestion that mindfulness with a spiritual approach can reduce anxiety and can be used as psychotherapy by changing the focus of attention and improving one's emotional control (Mayo, 2010).

During mindfulness, the nervous system activities are developed by stimulating the amygdala. The amygdala lowers the production of cortisol hormones that trigger anxiety and reduce stress reactions to the point of zero so that one can control his emotions, foster positive emotional responses and effective coping. Decreased cortisol will be followed by increased immunologic body resistance in order to speed up the healing of the patient (Mayo, 2010; Sholeh, 2006).

The results of this study also supported by previous research showed that mindfulness training with spiritual approach has an effect on psychological wellbeing with p-value 0.01 (Jayanti & Lestari, 2016). Similar with another study showed that there was an influence of mindfulness with spiritual approach for 9 days to violent behavior, which one of the respondents could calm himself independently and the other could control anger (Sari & Dwidiyanti, 2014).

At the time of intervention, the researcher involved the selected drug supervisor (PMO) and the patient to perform mindfulness with a spiritual approach independently. One of the community health care efforts in the community is to increase individual health efforts (UKP) by empowering patients to take care of themselves so as to speed the healing process (Efendi & Makhfudli, 2009). This is consistent previous study revelaed that there was an influence of mindfulness on the increase in self-confidence and self-independence in TB patients with p-value <0.05 (Noorratri, Margawati, & Dwidiyanti, 2017).

As this study did not involve control group, thus there might be other variables could possibly influence the emotional control of the patients. Therefore, experimental study with control group is needed to examine the effect of mindfullness with spiritual approach.

CONCLUSION

The mindfulness interventions with a spiritual approach has been shown to improve emotional control in adult patients with pulmonary TB. This intervention can serve as one of the interventions to prevent patients from experiencing more severe emotional disorders and speed up the healing process.

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