



Syndicate Group Discussion Combination with Brain Gym on Anxiety in Pulmonary Tuberculosis: Quasy-Experiment Study

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ABSTRACT

East Java is the province in Indonesia with the 2nd most BTA+ lung TB in 2018. The Programs that have been developed and carried out by the government have no programs that are able to overcome the psychological problems of people with TB. Intervention is needed to address the anxiety problems of pulmonary TB clients, so that the treatment and therapy that must be undergo by the sufferer can run effectively. The purpose of this study was to identify the effect of syndicate group discussion combination with brain gym on anxiety in pulmonary TB. Quasi-experimental study with pre and post-test design, 60 participants (30 in the treatment group and 30 in the control group) were selected by convenience sampling. Instrument used HARS. Data analysis used is the Mann Whitney and Wilcoxon Sign Rank Test. The mean scores about anxiety before and after intervention of treatment group (30,63 to 9,97) and control group (31,03 to 20,73). Wilcoxon test result showed that this intervention significantly decrease anxiety ($p=0,001$). And Mann Whitney result showed the difference in anxiety between treatment and control group ($p=0,001$). This combination can be applied to the decrease on anxiety of client with lung TB. Further research is needed on the same intervention, but the addition of a cortisol hormone assessment in assessing anxiety in clients as one of the variables.

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Syndicate Group Discussion Kombinasi Brain Gym terhadap Kecemasan pada Klien TB Paru: Quasi Eksperimen

ABSTRAK

Jawa Timur merupakan provinsi di Indonesia dengan posisi ke-2 kejadian BTA+ kasus TB paru di Tahun 2018. Program-program yang dikembangkan dan dilakukan oleh pemerintah belum ada mengenai penatalaksanaan tentang masalah psikologis penderita TB paru. Diperlukan intervensi untuk mengatasi masalah kecemasan klien TB, supaya pengobatan dan terapi yang wajib dijalani klien TB dapat berjalan efektif. Penelitian ini bertujuan untuk mengetahui pengaruh syndicate group discussion kombinasi brain gym terhadap kecemasan pada klien TB paru. Penelitian Quasi experiment dengan rancangan pre dan post design, 60 responden (30 kelompok intervensi dan 30 kelompok kontrol) dipilih dengan teknik convenience sampling. Instrumen menggunakan HARS. Analisa data menggunakan Mann Whitney dan Wilcoxon Sign Rank Test. Nilai rata-rata kecemasan sebelum dan sesudah dilakukan intervensi kelompok perlakuan (30,63 ke 9,97) dan kelompok kontrol (31,03 ke 20,73). Hasil uji Wilcoxon menunjukkan intervensi ini secara signifikan menurunkan kecemasan ($p=0,001$). Dan Hasil uji Mann Whitney menunjukkan ada perbedaan kecemasan antara kelompok perlakuan dan kontrol. Kombinasi ini dapat diaplikasikan untuk menurunkan kecemasan pada klien dengan TB paru. Penelitian selanjutnya, dengan intervensi yang sama, dapat menambahkan nilai hormone kortisol sebagai salah satu variabel penilaian kecemasan.

Kata kunci:

Brain gym
Kecemasan
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Introduction

Indonesia is the country with the 2nd most lung TB cases after India, that is 1.02 million cases (WHO, 2016). WHO (2016) reported in the Global Report tuberculosis, Indonesia has a high TB burden which is reviewed from a mortality rate of 40 per 100,000 inhabitants and a new case of 395 per 100,000 inhabitants. East Java province ranked second in Indonesia in the discovery of new cases of BTA+ lung TB in 2018. Amounted to 27,193, with a total of 229,961 cases (Kementrian Kesehatan Republik Indonesia, 2019). Cases of Pulmonary TB in Jombang Hospital Pulmonary Polyclinic recorded in 2019 were 3,501 as many as 3,501 clients with 1,807 clients for Pulmonary TB with Sputum Confirmation and 1,694 clients for Lung TB with Criteria (Medical Record RSUD Jombang, 2020). Various problems arising from pulmonary tb, one of which is psychosocial problems, that is anxiety in pulmonary tb clients. Preliminary study conducted at Jombang Hospital Pulmonary Polyclinic on September 07, 2020 on 10 pulmonary Tb clients has been obtained with the result of 6 experiencing severe anxiety, and 3 experiencing moderate anxiety, and 1 experiencing mild anxiety.

There is no government program in addressing the psychological problems faced by people with pulmonary TB, whereas this psychological impact has a huge effect on the adherence of medicine (Tola et al., 2017). In a research using the in-depth interview conducted by Venkrataju and Prasat, (2013), found 6 main psychosocial problems for Pulmonary TB clients: worry, disbelief, shame, fear of death, fate, and relief. These symptoms lead to anxiety problems in pulmonary TB clients (Guclu et al., 2018). Another report about TB clients experience high levels of anxiety (Peddireddy, 2016). Some of the effects of anxiety are that they do not want to take medication (Ruiz-Grosso et al., 2020), impact of non-adherence to medication can increased severity of illness, death, disease transmission and drug resistance. This condition impact to economic problem in terms of cost to patients and the health care system (Mekonnen and Azagew, 2018). Intervention is needed to address the anxiety problems of pulmonary TB clients, so that the treatment and therapy that must be undergo by the sufferer can run effectively.

Based on evidence based, health education interventions with psycho-education can lower levels of depression, anxiety and stress in TB clients (Suryani et al., 2016). With syndicate group discussion method is an interactive small group discussion that allows every participant to showed problem solving skill (Rofif, Rasni and Sulistyorini, 2016). Another related intervention in lowering anxiety levels is with the brain gym. This was proven correct in Adimayanti, Haryani and Puji Astuti research (2019) The two interventions combined hope to provide more effective results (Yusuf et al., 2020). Based on background of the problems, researchers conducted research on the influence of combination syndicate group discussion and brain gyms on anxiety in Pulmonary Tb clients who were undergoing treatment at Jombang Hospital Pulmonary Polyclinic.

Method

A total sample of 60 respondents in Pulmonary Polyclinic Jombang Hospital was selected with convenience sampling techniques with inclusion and exclusion criteria, consisting of 30 treatment group respondents and 30 control group respondents. The sample size is calculated using ps-power sample size calculation software. The inclusion criteria of

this research are clients aged 21-60 years, pulmonary TB clients who were undergoing treatment, clients have writing ability, clients have good hearing, clients understand commands, and for the exclusion criteria of this research are clients with heart disease, kidney failure, HIV/ AIDS, clients with hearing loss. As for the drop out criteria, that is the respondent died before the post test. This research was conducted from September to October 2020.

This research is a Quasi experiment with the design of "one group pre and post test with control group design" in which there is an intervention group to do syndicate group discussion and brain gyms, control group that get motivation and explanation of treatment procedures from nurses. The research was conducted at Pulmonary Polyclinic Jombang Hospital with a population of all TB client patients who met the researchers' specified criteria. The implementation of the research began by determining samples that fit the needs of researchers according to the criteria of inclusion. Respondents are given an explanation in advance about the purpose of research and need to sign the Infrom consent as a willingness to be a respondent. Divide respondents into treatment groups and control groups. Respondents in the intervention group and control group performed the anxiety measurements first. In the control group was treated according to therapy or treatment in the pulmonary polyclinic of Jombang Hospital. The intervention group to do syndicate group discussion and brain gyms divided into 2 sessions, the first session of brain gym followed by the next session of syndicate method discussion. Then post-test is done 2 weeks after intervention or subsequent visit at Pulmonary Polyclinic in Jombang Hospital.

Anxiety measurement using the Hamilton Anxiety Rating Scale (HARS) questionnaire measurement tool. Descriptive analysis is performed to obtain a description of the characteristics of the respondent, that is gender, age, education, and length of treatment. The results of the analysis are frequency distribution, percentage in each variable. The inference analysis used in this research is ordinal data using wilcoxon signed ranks test and Mann-Whitney U Test and data analysis was performed by researchers using statistical software.

This research has passed the ethics test through the Ethics Commission of Health Research of Jombang Regional General Hospital with No. 13/KEPK/IX/2020, published on September 03, 2020.

Results and Discussion

Respondent characteristic data includes gender, age, education level, and length of treatment. Respondent characteristic data is categorical data presented in the form of numbers and percentages (Table 1). Measurement of age equality, and education level between the treatment and control groups used the chi square for nominal data. If p-value > 0.05, it can be concluded that there is no difference in the character of age, education level, and length of treatment between the treatment group and the control group.

Table 1 showed total of 60 respondents with pulmonary tuberculosis were divided into 30 respondents in the treatment group and 30 respondents in the control group were actively involved in this study. The results of the equivalence test showed that there were no differences in the characters of gender, age, and education level between the treatment group and the control group. Most of them were male with more male respondents than female, namely 19 vs 11 (63.3% vs 36.7%) in the treatment group and 21 vs 9

(70% vs 30%) in the control group. Half of the respondents were aged 41 to 50 years, namely 12 people (40%) both the treatment group and the control group. In general, the

highest level of education was secondary education, 23 (76.7%) for the treatment group and 21 (70%) for the control group.

Table 1
Demographic characteristics of respondents (N=60)

Characteristics	Treatment Groups		Control Groups		TOTAL		p-value	
	n	%	N	%	n	%		
Gender	Male	19	63,3	21	70,0	40	66,7	0,584
	Female	11	36,7	9	30,0	20	33,3	
Age	21-30 years	6	20,0	5	16,7	11	18,3	0,514
	31-40 years	9	30,0	6	20,0	15	25,0	
	41-50 years	12	40,0	12	40,0	24	40,0	
	51-60 years	3	10,0	7	23,3	10	16,7	
Education Level	Primary Education	5	16,7	6	20,0	11	18,3	0,514
	Secondary Education	23	76,7	21	70,0	44	73,3	
	University	2	6,7	3	10,0	5	8,3	

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(76.7%) for the treatment group and 21 (70%) for the control group.

The majority of the participants were male (63%). Smoking and occupational exposure place men at the highest risk of TB incidence (Mason et al., 2017). In general, the highest level of education was secondary education. Education is one of the factors that influence the level of patient knowledge, in addition to experience, information, age and occupation (Herawati and Purwanti, 2018).

Poor knowledge about TB is a problem that often occurs in developing countries with a high incidence of TB (Zein, Suhariadi and Hendriani, 2017). Poor knowledge also affects the level of anxiety events (Wahyuni, Almumtahanah and Dewi, 2020).

Tables 2
Distribution of Anxiety Value of client with Pulmonary TB in undergoing treatment before intervention (N=60)

Variables	Groups	Mean	Median	SD	Min-Max
Anxiety	Treatment (n=30)	30,63	30,00	3,952	24-43
	Control (n=30)	31,03	31,00	4,140	24-44

Table 2 showed a mean value of anxiety at the stage before the intervention was 30.63 for the treatment group and 31.03 for the control group. While the minimum and maximum values are 24-43 for the treatment group and 24-44 for the control group. In conclusion, there was no difference in the value of anxiety before intervention with health education combined with brain gym between the treatment group and the control group.

Anxiety level scores using HARS questionnaires in pulmonary TB clients who were undergoing treatment showed most experienced severe anxiety before interventions between treatment and control groups. That fact supports research conducted by Kumar et al., 2016 out of 100 cases of Pulmonary Tb in India experiencing

psychosocial problems such as anxiety, depression and even psychiatric disorders. In line with Venkrataju and Prasat research (2013). They explored psychosocial problems in Pulmonary Tb using qualitative methods, one of the results is that pulmonary Tb sufferers feel anxious and afraid to live life with Pulmonary Tb diagnose. Anxiety in tuberculosis patients due to emotional problems related to their illness such as feeling bored, lacking motivation, to quite serious mental disorders such as severe depression (Jong, 2011). Other problems include stigma in society, fear of its incurable disease, feeling isolated and insecure, and economic problems (Aye' et al. 2011).

Tables 3
Distribution of anxiety value of client with pulmonary TB in undergoing treatment after intervention (N=60)

Variables	Groups	Mean	Median	SD	Min-Max
Anxiety	Treatment (n=30)	9,97	10,00	3,489	4-17
	Control (n=30)	20,73	21,00	3,073	13-25

Table 3 showed that mean value of anxiety prior to intervention which was 9.97 for the treatment group and 20.73 for the control group. While the minimum and maximum values are 4-17 for the treatment group and 13-25

for the control group. Post-test is conducted 2 weeks or the next respondent visits after intervention with health education combined with brain gym. To be able to describe the picture of anxiety, the anxiety score is divided into

anxiety with a score of < 6, mild anxiety scores of 6 to 14, moderate anxiety with a score of 15 to 27 and severe anxiety

with a score of >27. The result is presented in table 4.

Tables 4
Distribution frequency of anxiety levels before and after intervention

Variables	Groups/ Criteria	Pre Test		Post Test	
		f	%	f	%
Anxiety	Treatment				
	No Anxiety	0	0	5	16,7
	Mild Anxiety	0	0	21	70,0
	Moderate Anxiety	5	16,7	4	13,3
	Severe Anxiety	25	83,3	0	0
	Total	30	100	30	100
	Control				
	No Anxiety	0	0	0	0
	Mild Anxiety	0	0	2	6,7
	Moderate Anxiety	8	26,7	28	93,3
Severe Anxiety	22	73,3	0	0	
Total	30	100	30	100	

Table 4 showed that intervening combination syndicate group discussion and brain gym effective in reducing anxiety level. In the pre-test treatment group, there were 83.3% experiencing severe anxiety and 16.7% moderate anxiety to 70% mild anxiety, 16.7% no anxiety, and 13.3% moderate

anxiety at post-test. In the control group there was a decrease in anxiety from 73.3% experiencing severe anxiety and 26.7% moderate anxiety, to 93.3% moderate anxiety, 6.7% mild anxiety, as a result of standard intervention in Pulmonary Polyclinic Jombang Hospital.

Tables 5
Analysis effect of syndicate group discussion combination with brain gym on anxiety (N=60)

Variables	Groups	Pre Test		Post Test		P Value
		Mean	SD	Mean	SD	
Anxiety	Treatment	30,63	3,952	9,97	3,489	0,000
	Control	31,03	4,140	20,73	3,073	0,000
Selisih Mean		0,4		10,76		
<i>Mann-WhitneyU Test</i>		0,618		0,000		

Table 5 The mann-whitney showed that no different anxiety between the treatment and control group before intervention (p=0,618). Furthermore, the mean scores of anxiety decreased in two groups. However, the decrease was more in the treatment group. The combination syndicate group discussion and brain gym intervention was effective to reduce anxiety (p=0,000).

Identification of anxiety problems experienced by Pulmonary Tb clients in undergoing treatment has been carried out by Suryani et al. (2014), found 5 aspects of the need that are not met, among others health professionals, emotional and spiritual needs, information needs, network support needs and practical needs. Effective management is needed in reducing anxiety, so as not to have a wider impact on pulmonary Tb clients. One of the management that can be done is health education (Irawan, 2017; Setiawan, H, et.al., 2020). Health education interventions can improve knowledge, attitudes and practices in the treatment of people with Pulmonary TB (Bissallah et al., 2018). Good knowledge can improve understanding, patient attitudes in conducting home care, adherence to medicine, and prevention against the transmission of the disease, as well as avoiding social isolation behaviors that can cause anxiety (Kigozi et al., 2017). Providing health information can be done by using the discussion method, because this method is proven to be more optimal than the lecture method (Octavia, 2018). The selection of health education through the syndicate group discussion method is expected to be the right choice, by forming a small group of fellow Tb sufferers (4-6 respondents per group), so that the results are more maximal. Other than getting information about Pulmonary Tb, respondents can spread complaints and problems faced.

In addition, through the formation of the group can get used to cooperation, giving them the opportunity to develop a deliberation attitude and establish social relationships. (Dian et al., 2014). Such interventions are combined with brain gyms.

Brain gym can lower a person's anxiety level, because its movement can activate neocortex and parasympathetic nerves to reduce the increase in adrenaline hormones so as to relieve psychic tension as well as physical tension, soul and body become relaxed and balanced (Adimayanti, Haryani and Puji Astuti, 2019). Some studies also agree that brain gym movement can decrease anxiety by lowering cortisol hormone levels (Pramesti Wilujeng, 2018). Some research also agree that brain gym affect the decrease anxiety (Yunita et al., 2016).

The result of this study showed that combination syndicate group discussion and brain gym interventions significantly to reduce the mean scores anxiety (p=0,000). However, the decrease in anxiety scores also occurred in the control group, because the nurses in the pulmonary clinic provided support and education. Judging by the mean scores, the treatment group is larger than the control group. As for the intervention stage with combination syndicate groups discussion with brain gym, divided into 2 sessions, the first session of brain gym followed by the next session of health education syndicate method. Before doing the brain gym, our respondents pray first and are encouraged to do PACE. PACE stands for positive, active, clear and energetic. To run this PACE, it must start with energetic (drinking water), clear (doing brain switch massage), active (cross-movement), positive (relaxing tips) and continued with other gymnastic movements. PACE will help reduce anxiety and be in a

relaxed state. The movements used include: 1. Earth buttons 2. Balance buttons 3. The space button breathes slowly as if it were draining energy 4. The thinking cap repeats the movement 3-6 times. 5. The energetic gym (evaporating energized) and recommended yawning with a voice to relax the muscles as much as 3-6 times (Adimayanti, Haryani and Puji Astuti, 2019). The next session of syndicate group discussion which is a six participants gathered to discuss about treatment programs and provide support to one another. The combined two interventions as to produce more maximum results in lowering anxiety levels.

Conclusions and Recommendations

Intervention with combination syndicate group discussion and brain gym affects the decrease in anxiety of client with Pulmonary Tb who were undergoing treatment at Pulmonary Polyclinic Jombang Hospital. Brain gym

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