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The effectiveness of video media and Yoga Pranayama booklets on lung function and quality of life of asthma patients

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Abstract--Asthma is a chronic inflammatory disease of the respiratory tract characterized by episodes of wheezing, difficulty breathing, chest tightness and coughing. The prevalence of asthma sufferers in Indonesia according to Riskesdas 2018 is 2.4% with an incidence rate in West Java of around 3%, the highest in women at 2.5%). Yoga pranayama will provide relaxation for the body and

control breathing. Yoga can improve lung function, reduce stress levels due to shortness of breath and improve quality of life. The purpose of the study was to determine. The Effectiveness of Yoga Pranayama Video Media and Booklets on Lung Function and Quality of Life of Asthma Patients. Quasi-experimental research design - Pre Post Test with two groups, with a sample size of 33 respondents for the yoga pranayama group with video media and 33 respondents for the yoga pranayama group with booklet media, the sampling method was purposive sampling. Data analysis through univariate and bivariate analysis. The output produced is the HAKI video and Yoga pranayama booklet. For scientific journals, the proposal process is still ongoing. The results of the study obtained Statistical test results obtained a P value of 0.000, meaning that it can be concluded at alpha 5% that there is a significant difference in the average value of lung function of asthma patients between yoga pranayama with video media and booklet media. Statistical test results also obtained a P value of 0.076, meaning that it can be concluded at alpha 5% that there is a significant difference in the average value of quality of life of asthma patients between yoga pranayama with video media and booklet media. It can be concluded that yoga pranayama with both video media and booklets can improve lung function and quality of life of asthma patients. Yoga pranayama with video media is more effective than with booklet media.

Keywords---Booklet, Lung Function, Quality of Life, Video, Yoga Pranayama.

Introduction

Asthma is a chronic inflammatory disorder of the respiratory tract characterized by episodes of wheezing, difficulty breathing, chest tightness and coughing. Inflammation occurs due to increased responsiveness of the respiratory tract to various stimuli (Black, Hawk, 2014). Based on the Global Asthma Report 2018, chronic respiratory diseases, including asthma, cause 15% of deaths in the world. The prevalence of asthma sufferers in Indonesia according to RISKESDAS 2018 is 2.4% with an incidence rate in West Java of around 3%, the highest in women at 2.5%. The proportion of Asthma Patient Recurrence in the last 12 months in Indonesia is around 57.5% (KESMAS KEMKES, 2018).

The lung function of asthma patients will be disrupted, because in asthma patients there is inflammation and narrowing of the airways, so obstructive ventilation disorders will occur. Hasil tes fungsi paru pada pasien asma, dapat di ketahui adanya obstruksi jalan nafas akan mengalami peningkatan sebagai akibat dari udara yang terperangkap di dalam paru-paru. (Black, Hawk, 2014). In the asthma management program, there are 7 steps, one of which is light and simple exercise, meaning exercise that is adjusted to the abilities of the asthma sufferer.

Yoga will provide relaxation for the body, improve blood circulation and control breathing. (Akbar Nur, 2019). The results of Sukarno's (2017) study on the effect of yoga breathing exercises (pranayama) on the control and functional abilities of COPD patients, the results of the study showed that there was an effect of yoga pranayama exercises on reducing Dyspnea and increasing functional abilities for activity. Related research by Akbar (2019) on the Effect of a combination of yoga pranayama exercises with endurance exercise on increasing forced peak expiratory flow and asthma control at Airlangga Hospital and Haji Hospital Surabaya, the results of the study stated that there was an increase in forced peak expiratory flow after yoga pranayama with endurance exercise for 6 weeks.

In order for yoga activities to be conveyed well to asthma patients, the delivery uses Booklet and Video media. Booklets and Videos are tools that can present information, explain processes, explain complex concepts, teach skills, shorten or slow down time and influence attitudes (Kustandi, C (2013). Learning video media is a set of components or media that can display images and sound at the same time (Sakiman, 2012). The novelty of this study is to compare which is more effective in delivering yoga pranayama that can improve lung function and quality of life for asthma patients, whether through booklets or videos. The standard media for yoga training is through videos and direct assistance from yoga instructors (Sri Wahyuni, et al., 2023). The purpose of the study was to determine the effectiveness of yoga pranayama through Booklet and Video media on Lung Function and Quality of Life for Asthma Patients.

Method

This study uses a Quasi-experimental research design - Pre Post Test with control group. The products to be created are Booklets about yoga pranayama through booklet media and Videos about yoga pranayama and asthma exercises to improve lung function and quality of life for asthma patients. Data analysis was carried out by a normality test first to determine whether the data was normally distributed or not using the Kolmogorov-Smirnov test. If the data is normally distributed ($p \geq \alpha$), a One Way Anova test was carried out and if significant, it was continued with a Dependent T-Paired test for pre- and post-test data and an Independent T-Paired test for Yoga Intervention data. If the data is not normally distributed ($p < \alpha$), a Kruskal Wallis test will be carried out and if significant, it will be continued with a Mann Whitney test. The significance limit uses a 95% confidence level with a p value < 0.05 . Data presentation uses graphs, tables and narratives.

From the sample calculation above, the minimum sample size is 33 plus 10% for those who drop out, so 36.3 (36) people. The sample of this study was asthma patients in Bogor City, with inclusion criteria of male and female, adult age, never done yoga and asthma exercises, and willing to be respondents. The exclusion criteria are patients who are not having an asthma attack. Sampling was carried out using a Non-Random Sampling technique, namely purposive sampling.

Discussion

Research "Effectiveness of Video Media and Yoga Pranayama Booklets on Lung Function and Quality of Life of Asthma Patients" This research was conducted for three months. Pranayama yoga activities with video media and booklets were carried out for 6 weeks where yoga was carried out twice a week. After completing the yoga activities, the respondents' lung function and quality of life were measured again. The number of respondents who took part in this study was 33 people for the yoga group with pranayama with video media and 33 people for the yoga group with pranayama with booklet media. During the study, no respondents dropped out because they were monitored and motivated by the research team. The results of this study are:

1. Age Characteristics, Lung Function Values and Quality of Life of Asthma Patients Before and After Yoga Pranayama with Video Media and Booklet.

Table 1
Characteristics of Age, Lung Function Value and Quality of Life of
Asthma Patients Before and After Pranayama Yoga with Video
Media and Booklet
n=66

Variable	Group Type	Mean	SD	Min - Mak	95% CI
Age (n=66)	1. Video group	59,82	10,6	42 - 80	56,05 – 63,58
	2. Booklet group	58,03	17,7	22- 86	51,75 – 64,31
Lung Function Before Yoga (n=66)	1. Video group	139,39	60,9	100 - 300	43 - 78
	2. Booklet group	120,6	38,24	80 -240	107,05 – 134,16
Lung Function After Yoga (n=66)	1. Video group	229,7	76,9	110 - 400	202,4 - 257
	2. Booklet group	176,21	40,4	100 - 270	156,87 – 185,55
Quality of Life Before Yoga (n=66)	1. Video group	74,27	5,29	65 - 84	72,4 – 76, 15
	2. Booklet group	77,03	61,63	67- 90	74,68 – 79,38
Quality of Life Before Yoga (n=66)	1. Video group	107,12	12,78	85 - 127	102, 59 – 111,65
	2. Booklet group	99,03	22,3	83 - 100	56,05 – 63,58

Table 1 explains that the average age of asthma patients who do yoga with video media is 59.82 years and asthma patients who do yoga with booklet media is 58.03 years.

In table 1 above, the average value of lung function of asthma patients before doing yoga with video media is 139.39 L / m while the average value of lung function of asthma patients before doing yoga with Booklet media is 120.6 L / m. The average value of lung function of asthma patients after yoga with video media is 229.7 L / m and the

average value of lung function of asthma patients after doing yoga with Booklet media is 176.21 L / m.

In table 1 above, the average value of quality of life of asthma patients before doing yoga with video media is 74.27 while the average value of quality of life of asthma patients before doing yoga with Booklet media is 77.03. The average value of the quality of life of asthma patients after yoga with video media was 107.12 and the average value of the quality of life of asthma patients after doing yoga with Booklet media was 99.03.

Table 2
Gender of Asthma Patients Who Followed Pranayama Yoga with Video Media and Booklets n=66

Gender	Group Type	Amount	Percentage
Male	Kel. Video	13	39,4
Female		20	60,6
Male	Kel. Booklet	21	63,63
Female		12	36,37

From table 2. Above, it can be seen that asthma patients who follow yoga with the video method are mostly female, 20 people (60.6%). For asthma patients who follow yoga with booklet media, most are male, 21 people (63.63%). while the average difference before and after yoga pranayama with booklet media was 50.6 L/m.

Table 3
The Effect of Yoga Pranayama with Video and Booklet Media on Lung Function and Quality of Life of Asthma Patients N=33

Variable	Group Type	Mean	P Value	N	Difference	
					Mean	SD
Lung Function	Video group Before After	139,39 229,7	0,000	33	90,3	55,8
	Booklet group Before After	120,6 171,2	0,000	33	50,6	36,2
Quality of life	Video group Before After	74,27 107,12	0,000	33	32,8	13,05
	Booklet group Before After	77,03 99,03	0,000	33	22	22,7

Table 3. Above can explain that there is an effect of yoga pranayama with video media and booklets on the lung function of asthma

patients ($P = 0.000$, $\alpha = 0.05$), with an average difference before and after yoga pranayama with video media is 90.3 L / m while the average difference before and after yoga pranayama with booklet media is 50.6 L / m. Table 3. can also explain that there is an effect of yoga pranayama with video media and booklets on the quality of life of asthma patients ($P = 0.000$, $\alpha = 0.05$), with an average difference before and after yoga pranayama with video media is 32.8 while the average difference before and after yoga pranayama with booklet media is 22.

Table 4
Effectiveness of Yoga Pranayama with Video and Booklet Media On Lung Function and Quality of Life of Asthma Patients

Variable	Group	Mean	SD	SE	P Value	N
Lung function after yoga pranayama	1. Media Video	229,7	76,9	13,4	0,000	33
	2. Media Booklet	171,2	40,4	7,04		33
Quality of life after yoga pranayama	1. Media video	107,12	12,8	2,2	0,076	33
	2. Media Booklet	99.03	22,36	3,9		33

From Table 4, it explains that the average lung function value of asthmatic patients in the yoga group with video media is 229.7 L/m and in the yoga group with booklet media 171.2 meaning the lung function value of the video media group is greater than the booklet media group. The results of the statistical test obtained a P value of 0.000, meaning that it can be concluded at alpha 5% there is a significant difference in the average lung function value of asthmatic patients between yoga pranayama with video media and booklet media. From table 5.4 above it also explains that the average quality of life value of asthmatic patients in the yoga group with video media is 107.12 and in the yoga group with booklet media 99.03 meaning the quality of life value of the video media group is greater than the booklet media group. The results of the statistical test obtained a P value of 0.076 meaning that it can be concluded at alpha 5% there is a significant difference in the average quality of life value of asthmatic patients between yoga pranayama with video media and booklet media.

The purpose of this study as explained in chapter I is to determine the Effectiveness of Video Media and Yoga Pranayama Booklets on Lung Function and Quality of Life of Asthma Patients. The instrument used is to measure lung function using a Peak Flow Meter, a tool to measure the smoothness of air flow from the lungs or also called normal peak flow. The normal value for adults is 400 to 700 L / m. For quality of life, the WHOQOL-100 questionnaire (The World Health Organization Quality of Life Assessment) is used. consisting of 4 domains, namely physical health aspects, psychological health aspects, social relationship aspects,

and environmental conditions aspects. Packaged into 26 questions representing the four domains The final results of the quality of life value can be categorized into 4 levels of quality of life, namely, a value of 0 -20 very poor quality of life, 21 - 40 poor quality of life, a value of 41 -60 moderate quality of life, a value of 61 -80 good quality of life, a value of 81 - 100.

The results of the study explain that the average lung function value of asthmatic patients in the yoga group with video media is 229.7 L / m and in the yoga group with booklet media 171.2 meaning that the lung function value of the video media group is greater than the booklet media group. The results of the statistical test obtained a P value of 0.000, meaning that it can be concluded at alpha 5% that there is a significant difference in the average value of lung function of asthma patients between yoga pranayama with video media and booklet media. And for the quality of life the results are that the average value of the quality of life of asthmatic patients in the yoga group with video media is 107.12 and in the yoga group with booklet media 99.03 means that the quality of life of the video media group is greater than the booklet media group. The results of the statistical test obtained a P value of 0.076, meaning that it can be concluded at alpha 5% that there is a significant difference in the average value of the quality of life of asthma patients between yoga pranayama with video media and booklet media.

The data above shows that yoga pranayama with both video media and booklet media can improve lung function and the quality of life of asthma patients. From the data results above, it can also be seen that the average increase in lung function and quality of life of asthma patients is greater in the group that carries out yoga pranayama with video media, meaning that it can be said that yoga pranayama with video media is more effective than yoga pranayama with booklet media.

The results of the study above are in line with the theory that yoga pranayama will provide relaxation for the body, improve blood circulation and control breathing. (Akbar Nur, 2019). In order for yoga activities to be conveyed properly to asthma patients, the delivery uses Booklet and Video media. Booklets and Videos are tools that can present information, explain processes, explain complex concepts, teach skills, shorten or slow down time and influence attitudes (Kustandi, C (2013). Learning video media is a set of components or media that can display images and sound at the same time (Sakiman, 2012).

The results of the study above are also in line with Akbar's research (2019) on the Effect of a combination of yoga pranayama training with endurance exercise on increasing forced peak expiratory flow and asthma control at Airlangga Hospital and Haji Hospital Surabaya, the results of the study stated that there was an increase in forced peak expiratory flow after yoga pranayama with endurance exercise for 6 weeks. Other related research by Hendri Budi (2008) on the relationship between the quality of

asthma gymnastics and the quality of life of asthma patients at RSPAD Gatot Subroto Jakarta, the results of the study stated that there was a significant relationship between the quality of asthma gymnastics and the quality of life of asthma patients. Sukarno's research (2017) on the effect of yoga breathing exercises (pranayama) on dyspnea and functional abilities of COPD patients, the results of the study shows that there is an effect of yoga pranayama practice on reducing Dyspnea and increasing functional ability for activity.

The above research is supported by the commitment of all respondents who participated in the yoga pranayama activity. For lung function, all respondents were at a value of less than 400 L / m, meaning less than normal, after doing yoga pranayama there was an increase although not much and still below normal. This is due to the average age factor which is elderly and the duration of the disease. For the quality of life before yoga pranayama was done, the average was at a moderate quality of life and after yoga pranayama was done it rose to an average of good quality of life, this is because the spirit of life of asthma patients is indeed good, seen from their routine check-ups to the hospital every month. All respondents were very happy to do this yoga pranayama and they will continue this yoga activity.

Conclusion

1. Yoga pranayama with video media and booklets can improve lung function and quality of life of asthma patients.
2. Yoga pranayama with video media is more effective in improving lung function and quality of life of asthma patients.

Recommendation

1. Further research can be conducted on other non-pharmacological supportive therapies to improve lung function and quality of life of asthmatic patients
2. Hospitals as one of the health service institutions can increase yoga pranayama activities to improve lung function and quality of life of asthmatic patients.
3. High awareness and motivation are needed for asthmatic patients in facing and overcoming all physical health problems and their environment.

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