DIFFERENCE OF PEF (Peak Expiratory Flow) VALUE BEFORE AND AFTER DOING ASTHMA GYMNASTIC THERAPHY IN ASTHMA ASSOCIATION OF SIDOARJO

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ABSTRACT

Background Astma Gymnastic theraphy or most familier called health respiratory gymnastic is a special respiratory gymnastic for astma patient are structured by medical rehabilitation departement in Dr. Soetomo Hospital. Astma Gymnastic theraphy have many advantage such as decrease astma attack. Astma Sign can be detected with conlrole the PEF (Peak Expiratory Flow) Value using Mini Wright Peak Expiratory Flow meter. The objectives of this study is to analyze different PEF (Peak Expiratory Flow) value before and after doing astma gymnastic theraphy.

Method This research used type is Quasy experiment with one group of pre-test and post-test design strategy, with twelve respondent ,and obtained by purposive sampling technique. Independent variables is astma gymnastic theraphy in astma paients in Astma Association of Sidoarjo, then dependent variable is PEF (Peak Expiratory Flow) value with direct observe in study respondent, of the data collecting known PEF value before astma gymnastic theraphy all in mid level, and PEF value after astma gymnastic theraphy almost all in mid level then analyzed with t-test to know influence Independent variables to dependent variable. with significance level α (0,05). The result of this research from analysis "t- test" got result at ρ = 0,000. it mean there is effect Astma Gymnastic theraphy with increase of PEF (Peak Expiratory Flow) Value.

Results Based on the result of data analysis and hypothesis verifications, that there is effect Astma Gymnastic theraphy to increase PEF (Peak Expiratory Flow) Value. Suggest to hospital or other health depattement for using Astma Gymnastic theraphy as preventive and rehabilitative theraphy for astma patients.

Keyword : Astma Gymnastic theraphy, PEF (Peak Expiratory Flow) Value

INTRODUCTION

Asthma is an inflammatory disease characterized by periods obtruktif episodic spasm of smooth muscles in the walls of the bronchial airways, bronchospasm it constricts the airway so that makes breathing difficult and cause wheezing.This disease can occur or sustained by any person of any age, the initial attack of asthma may occur in childhood or adulthood. Acute episodes of asthma are called asthma attacks can be triggered by stress, exercise, infection or exposure to allergens or other irritants such as dust, pet dander, and others. Many clients of asthma in the family have a history of allergies and the main symptoms of this disease usually dyspnea, headache, nausea

Based on WHO records there are about 100 to 150 million people with asthma in the world. This figure continues to surge as much as 180,000 annually. While the research conducted in various places in Indonesia in 1999 Indonesia Asthma Foundation data shows the number of asthma sufferers is 40% of the population which means that there are approximately 8 million people with asthma of about 200 million people in Indonesia. According to data obtained from the Department of Health Sidoarjo, shows that the number of people with asthma in 2012 was 29 248 people, and in 2013 were 30 172 patients. At the foundation of asthma Sidoarjo number of participants and people with asthma until november 2014 as many as 164 people.

Indonesia Asthma Foundation explained that asthma is a disease that is present in the pipe airways in the lungs, during an asthma attack sufferers usually directly experiencing shortness of breath extraordinary that require medication. Each patient will be recommended medication by different doctors, but there is one positive activities that help the recovery of people with asthma is asthma gymnastics. Sports are recommended in patients with asthma is a respiratory gymnastics and swimming.

Indonesia Asthma Foundation has standardize forms of asthma exercise for asthmatics is warming up and stretching (10-15 minutes), core exercises A and B (30 minutes), aerobics (5 minutes) and cooling (5 minutes) (Indonesia Asthma Foundation, 2003) , Asthma Foundation described how asthma gymnastics can help asthma patients to improve the quality of life. The benefits of exercise asthma include: train the correct way of breathing, flexing and strengthening the respiratory muscles, train expectorated true also improves circulation. Studies that have been done before also mentioned their influence on asthmatics asthma gymnastics, namely in patients with mild and moderate persistent asthma who follow gymnastics asthma Indonesia in the department of Friendship 4 times a week to get a decrease in clinical symptoms of over 75% in the case group. To find out how far the benefits of gymnastics asthma in increasing the strength of the respiratory tract can be done by measuring lung function. The measurement is performed before doing gymnastics asthma and asthma after exercise that is intended for any changes after doing gymnastics asthma.

Its modern-day lung and respiratory diseases is increasing so the role of lung function testing is increasingly important both for diagnosis, assessment of therapeutic efficacy or predict disease. Lung function measurements more objective to assess the degree of airway obstruction by measuring PEF (peak expiratory flow) using Mini Wright peak flow meter. In addition to relatively inexpensive, simple, easy portability and also how the examination. This tool has been widely used in patients with asthma or a respiratory disease screening tests. The greater the value of PEF someone, the better it state that the respiratory tract. Based on the background of the above problems, the researchers interested in conducting research whether there are differences in the value of PEF (peak expiratory flow) in participants with asthma exercises before and after exercise asthma Asthma Foundation branch in Sidoarjo. Based on the above can be formulated question how the problem "Is there a difference in the value of PEF in gymnastics participants with asthma before and after exercise asthma Asthma Foundation branch in Sidoarjo

RESEARCH METHODS

This study design used quasy experiment or semi experiments. The strategy of research by one group pre test and post test design .In this study, researchers did a pre-test to measure the value of PEF (peak expiratory flow) prior to asthma gymnastics respondents who fit the criteria .. Researchers will be treating asthma gymnastics on respondents. Then the researchers did post test to determine the value of PEF (peak expiratory flow) after asthma gymnastics. The population in this research participants and patients with asthma who had never done gymnastics asthma Asthma Foundation branch in Sidoarjo. Large population in this study is 12 people. The sample size is the number of members who used the sample of 12 patients with asthma. The sampling technique used purposive sampling where the sample was selected among the population according to the desired researchers, so that samples can represent the characteristics of the population that has been known previously. Independent variables in this study were asthma gymnastics and Dependent variables in the research value is the value of PEF (peak expiratory flow).

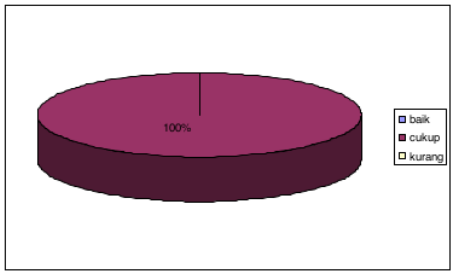
The research instrument used is observation, researchers will observe asthma gymnastics done by respondents, and the observed value of PEF (peak expiratory flow) of respondents

participants in gymnastics asthma Asthma Foundation Sidoarjo branch that meets the criteria of samples. A data collecting method used sheet asthma gymnastics implementation procedures and observation sheet value of PEF (peak expiratory flow) of the respondents before and after exercise asthma.The location of this study, taking place at the Asthma Foundation Sidoarjo branch, while the study period from May to July 2014.

RESULTS

PEF value measurement (peak expiratory flow) prior to exercise asthma. The results of the research value of PEF (peak expiratory flow) of the 12 participants gymnastics gymnastics asthma asthma before the data obtained as follows

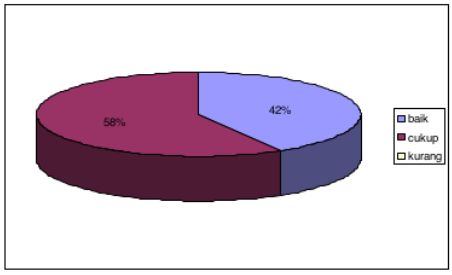
Pie Chart 1 Results of measurement of value PEF (peak expiratory flow) before gymnastics asthma (n = 12)



Source : Primary Data, June 2014

Pie chart 1 above shows the 12 participants in the gymnastics asthma Asthma Foundation Branch of Sidoarjo, it was found that the value of PEF (Flow Peak expiratory) all participants gymnastics asthma are at sufficient levels (100%) Variation of the value of PEF is strongly influenced by age, sex, race , height. (Tierney, 2002). PEF value measurement (peak expiratory flow) after gymnastics asthma .The results of the research value of PEF (peak expiratory flow) of the 12 participants after the namesake asthma asthma gymnastics data obtained as follows:

Pie Chart 2 Result PEF value measurement (peak expiratory flow) after gymnastics asthma (n = 12)



Source : Primary Data, June 2014

2 above pie chart shows the 12 participants in the gymnastics asthma Asthma Foundation branch in Sidoarjo, it was found that the value of PEF (peak expiratory flow) after asthma gymnastics mostly located at sufficient levels (58%). According suddart, brunner (1997) sports or physical exercise regularly will improve the working muscles, including breathing muscles and will reduce the intensity and frequency of spasms, reduce drug use, improve posture, improve functional capacity, and tolerance exercise. Distribusi value measurement frequency value changes PEF (peak expiratory flow) before and after exercise asthma.

The table below describes the value of PEF (peak expiratory flow) by means of the Mini Wright Peak Flow Meter. Based on the observation and recording of 12 participants gymnastics asthma Asthma Foundation branch in Sidoarjo .

Table 1 Distribution Frequency Measurement results PEF Values Before and After Gymnastics Asthma Asthma Foundation branch in Sidoarjo.

Number respondents	peak expiratory flow values		Information
	Before gymnastics	After Gymnastics	
0001	270 L/menit	330 L/menit	Naik 60 L/m
0002	310 L/menit	380 L/menit	Naik 70 L/m
0003	280 L/menit	340 L/menit	Naik 70 L/m
0004	300 L/menit	370 L/menit	Naik 70 L/m
0005	290 L/menit	380 L/menit	Naik 70 L/m
0006	230 L/menit	360 L/menit	Naik 70 L/m
0007	330 L/menit	400 L/menit	Naik 70 L/m
0008	240 L/menit	310 L/menit	Naik 70 L/m
0009	300 L/menit	350 L/menit	Naik 70 L/m
0010	280 L/menit	340 L/menit	Naik 70 L/m
0011	320 L/menit	420 L/menit	Naik 70 L/m
0012	350 L/menit	410 L/menit	Naik 70 L/m
Uji-t paired test (α=0,05)	ρ= 0,000		

Source : Primary Data, June 2014

Table 1 Distribution Frequency Measurement results PEF Values Before and A Based on table 1 above showed that there was a difference (increase) the value of PEF (peak expiratory flow) before and after exercise asthma. According to Tierney (2002) monitoring PEF (peak expiratory flow) can determine the peak flow variability and assist in determining the severity of a patient's asthma. Ideally PEF (peak expiratory flow) must be measured in the morning before the administration of bronchodilators and in the afternoon after the administration of bronchodilators. Predicted value for PEF (peak expiratory flow) vary according to sex, age, and height. According Alsagaff (2005) using Mini Wright Peak Flow Meter severity of airway obstruction can be known. Results of analysis using t test with computerized calculation of the significance level $\alpha = 0.05$ obtained significant values (ρ) = 0.000, which means there is a difference between t the significance level of $p < \alpha$ H1 So having said that there are differences in the value of PEF (peak expiratory flow) before and after doing gymnastics Asma received.fter Gymnastics Asthma Asthma Foundation branch in Sidoarjo.

DISCUSSION

The results of this study include the treatment of asthma gymnastics, APE value (peak expiratory flow), and the difference in the value of PEF (peak expiratory flow) before and after doing gymnastics asthma Asthma Foundation branch in Sidoarjo

APE examination results (peak expiratory flow) before doing gymnastics asthma asthma gymnastics obtained all participants are at sufficient levels (200-370L / min). This is because patients with asthma before doing gymnastics asthma have demonstrated their ability breathing muscles are less than the maximum, as well as the patient's age, gender, allergies talent, race, heredity, environment, and this psikologis.Hal factor according to the theory that PEF is the maximum amount of air flow can be achieved when the forced expiratory within a certain time. The variation of the PEF is strongly influenced by age, sex, race, height, and smoking. PEF normal numbers of adult women 380-500 L / min. PEF value of less than 200 L / min indicating respiratory airflow obstruction (Tierney, 2002)

PEF examination results (peak expiratory flow) after doing gymnastics asthma showed that most participants had asthma gymnastics PEF enough value (200-370L / min), and almost half of the participants had asthma gymnastics PEF good value (380-500 L / min). This is because asthma gymnastics has the benefit of lowering the frequency of asthma attacks, asthma symptoms become lighter, and increase muscle strength breathing.This matter consistent with the theory that sport or physical exercise regularly will improve the working muscles, including breathing muscles and will reduce the intensity and the frequency of spasms, reduce drug use, improve posture, improve functional capacity and exercise tolerance so that people become more independent, and quality of life of patients increased (Suddart, Brunner, 1997) .In the mechanisms of pulmonary ventilation itself, the lungs can develop deflated through two ways: (1) the diaphragm moves up and down to zoom in or out of the chest cavity and (2)

the depression and elevation of the ribs to increase or decrease the anteroposterior diameter of the chest cavity (Guyton, 1997). Breathing muscles contribute to the process of depression and elevation of the ribs so we need a sport to optimize the function of the respiratory muscles. It is important for everyone no exception for people with asthma. branch in Sidoarjo

Examination of PEF (peak expiratory flow) using a Mini Wright Peak Flow Meter suggested in the early detection of asthma attacks. Peak Flow Meter can be used to assess airway obstruction by measure PEF. Peak Flow Meter relatively inexpensive, simple, easy portability and also how the examination. Here PEF can be used to monitor the condition of asthma patients and obstruction detecting early signs of asthma. Table 1 which includes the distribution of the value of PEF (peak expiratory flow) difference where the value of PEF after doing gymnastics asthma is higher, compared with the value of PEF before doing gymnastics asthma. Based on the analysis using the t test with computerized calculation of the significance level $\alpha = 0,05$ available significant values $(\rho) = 0,000$ so the value $\rho < \alpha$ or $0,000 < 0.05$ it means that H1 is said that there are different grades PEF (peak expiratory flow) before and after the gymnastics asthma accepted, meaning that there is no significant difference between the value of PEF (peak expiratory flow) before and after doing gymnastics asthma. asthma Foundation branch in Sidoarjo. This is because asthma gymnastics has the benefit of lowering the frequency of asthma attacks, relieve asthma symptoms, and improve respiratory muscle strength, so it can be concluded that in this study there is significant from asthmagymnastics on the value of PEF. Gymnastics Asthma affects the respiratory muscle strength because in every exercise movement patterns of asthma prefers a longer expiration than inspiration, where gymnastics asthma breathing pattern is different from other aerobic exercise or calisthenics. This is in accordance with asthmatics is always impaired during expiration. Respiratory muscle strength so that the perpetrators of asthma gymnastics become stronger and become normal bronchial size that can be measured objectively by measuring the PEF (peak expiratory flow). Gymnastics asthma suggested as rehabilitative measures for asthmatics to improve muscle strength, especially respiratory muscles. Gymnastics asthma is not only recommended for people with asthma but also all those who want to improve the function of the respiratory system

According to the Asthma Foundation Indonesia (2004), asthma gymnastics will result in asthma patients if performed regularly at least 6-8 weeks. In this study proved that almost all asthma patients who followed the exercise with asthma have a value of PEF (peak expiratory flow) is higher than before doing gymnastics asthma. In addition to asthma gymnastics influenced by habit, the low value of PEF also be affected by other factors among which are the age, the degree of asthma and asthma medication use prior to the measurement of the PEF. To know that the factors influencing the differences in the value of PEF two groups in this study is the habit of asthma gymnastics the other factors above occur sought no significant difference function of the respiratore system.

CONCLUSIONS AND RECOMMENDATION

Conclusion

Value PEF all participants before doing gymnastics gymnastics asthma Asthma Asthma Foundation branch in Sidoarjo are at sufficient levels and participants gymnastics after doing gymnastics asthma Asthma Foundation Branch of Sidoarjo are at a good level, and most are at a considerable level.

There is a significant difference between the value of peak expiratory flow (PEF) participants asthma gymnastics before doing gymnastics asthma and asthma after doing gymnastics, where the value of APE asthmatics before doing gymnastics asthma is lower than after doing gymnastics asthma.

Recommendation.

Asthmatics can better follow asthma gymnastics as part of efforts to prevent the recurrence of asthma, lower the intensity and frequency of spasms, reduce drug use, improve posture, improve functional capacity and exercise tolerance so that people become more independent, and the quality of life increasese respiratory system.

REFERENCES

Agustina (2005).Pengaruh Senam Asma Terhadap Penurunan Gejala Asma. http://scribd.blogspot.com. Diakses 29 Jul 2014

Alsagaff, Hood (2005). Dasar-dasar Ilmu Penyakit Paru. Surabaya: Airlangga UniversityPress

Arikunto S (2006). Prosedur Penelitian. Jakarta: Rineka Cipta

Aziz, Alimul (2003). Riset Keperawatan Tenik Penulisan Ilmiah. Jakarta: Salemba Medika

Hall, Guyton (1997). Anaomi Fisiologi Manusia. Jakarta: EGC

Kumoro, Daru (2008). Manfaat Senam Asma. http://www.linkpdf.com./download/dl Diakses 14 Januari 2014

Kholid,Ahmad (2002). Prosedur Senam Asma. http://masmamad.blogspot.com.Diakses 14 Januari 2014

Mangunnegoro, Hadiarto dkk (2006). Asma Pedoman Diagnosis &Penatalaksanaan di Indonesia. Jakarta: Balai Penerbit FKUI

Mansjoer , Arif (2000). Kapita Selekta Kedokteran. Jakarta: Media Aeusculapius.

McGraw (1995). Prinsip-Prinsip Ilmu Penyakit Dalam Volume III. Jakarta: EGC

Ngastiyah (2005). Perawatan Anak Sakit. Jakarta: EGC

Notoadmodjo, Soekidjo (2010).Metodologi Penelitian Kesehatan. Jakarta: Rineka Cipta

Nursalam (2003). Konsep dan Penerapan Metode penelitian Ilmu Keperawatan. Jakarta: EGC

Pradjnaparamita (1997). Persiapan Pemeriksaan APE dalam Pelangi Asma. http://www.scribd.com. Diakses pada 25 Maret 2014

Suddart, Brunner (2001). Keperawatan Medikal Bedah. Jakarta: EGC

Suddart, Brunner (1997). Keperawatan Medikal Bedah. Jakarta: EGC

Sundaru, Heru (2002). Asma. Jakarta: FKUI

Tabrani, Rab (1996).Prinsip Gawat Paru. Jakarta: EGC

Tice, Baumeister (1997). Stres dan Koping Stres Pekerja. www.linkpdf.com/ source.data. Diakses 29 Juli 2014

Tierney, Lawrence M dkk (2002). Diagnosis dan Terapi Kedokteran. Jakarta: Salemba medika

Vitahealth (2005). Asma. Jakarta: Gramedia Pustaka

Yayasan Asma Indonesia (2003). Senam Asma Indonesia. Jawa Timur: RSUDr.Soetomo

Yayasan Asma Indonesia, (2004). Klub Asma Indonesia. http: // www. infoasma. org. Diakses 20 Maret 2014

------ (2008). Pedoman Pengendalian Asma. www.depkes.go.id. Diakses 29 januari 2014

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