

RESPIRATORY FREQUENCY OF CHILDREN WITH ASTHMA USING SUPERBUBBLES BLOOD INTERVENTION

Harsismanto J¹, Padila², Juli Andri³, Muhammad Bagus Andrianto⁴,
Andry Sartika⁵
Pematang Tiga Health Center¹
University of Muhammadiyah Bengkulu^{2,3,4,5}
harsismanto@gmail.com¹

ABSTRACT

This study aimed to compare blowing bubbles blades to the respiratory frequency of children with asthma in the Edelweiss Room, DR. M. Yunus Bengkulu Year 2019. The research design used was quasi-experimental research. The univariate analysis results showed that the average respiratory rate before and after super bubble blow therapy was moderate (26.91). Before and after blowing the propeller, the intermediate respiratory frequency was medium (26.69) and light (24.81). The bivariate analysis results showed an effect of blowing bubbles on respiratory frequency in children with a value of $p = 0.000$. In conclusion, there is no difference in superbubbles blowing therapy's effectiveness by blowing bamboo propellers in children with asthma.

Keywords: Respiratory Frequency, Blow Super Bubbles

INTRODUCTION

The number of people with asthma reached 27% more women than men, who only got 14%. For girls, their asthma did not decrease because women experienced a narrowing of the respiratory tract by up to 20% when they grew up. However, currently, the incidence of asthma is more in men due to cigarette smoke pollution (Primadyastuti, 2017)

The World Health Organization (WHO) report in the 2016 world health report stated that the five major lung diseases accounted for 17.4% of all deaths in the world, each consisting of 7.2% lung infection, COPD (Chronic Obstructive Pulmonary Disease) 4, 8%, tuberculosis 3.0%, lung/trachea/bronchial cancer 2.1% and asthma 0.3%. The Global Initiative for Asthma (GINA) estimates that 300 million people worldwide have asthma. The total prevalence of asthma globally is estimated at 6% in adults and 10% in children (Infodatin, 2017).

Research conducted by the National Health Interview Survey using the ISAAC (International Study on Asthma and Allergy in Children) questionnaire said that the consequences of untreated asthma could lead to death. The study noted that asthma was the eighth cause of death from existing data in Indonesia; the prevalence of asthma symptoms jumped from 4.2% to 5.4% (Hardina & Wulandari, 2019).

The cause of asthma has something to do with the body's antibodies that have excessive sensitivity to allergens, in this case, is Immunoglobulin (Ig) E. While the allergens referred to here can be either intrinsic or extrinsic allergens. So that asthma can be passed down from parents to their families (Padila, 2012; Padila et al., 2019). This hereditary factor can also cause disturbances in child development (Padila et al.,

2019; Panzilion et al., 2020).

Asthma in children needs good treatment from health workers because the disease can be experienced continuously by children even into adulthood. Therefore there is a need for therapy given to children, both pharmacological treatment and non-pharmacological treatment. Non-pharmacological treatment that can be given to children is purse lips breathing.

Like therapy blowing superbubbles is a game that requires deep inspiration and prolonged expiration. The goal of this therapy is to train to breathe. Namely, end to is more extended than inspiration to facilitate the expulsion of carbon dioxide from the body held back due to airway obstruction. Play therapy blowing superbubbles is intended for children who have disorders of the respiratory system, especially asthma, aiming that lung function in children will increase and become normal (Hockenbery et al., 2016).

Based on data from RSUD dr. M. Yunus Bengkulu, the number of asthma occurrences each year has decreased, namely in 2015 as many as 129 people, in 2016 as 72 people, and 2017 as many as 71 people. Based on the initial survey conducted on September 11, 2018, at RSUD dr. M. Yunus Bengkulu, there are 16 asthmatic patients aged 2-5 years, and interviews were conducted with nurses in the room. There is no non-pharmacological therapy for people with asthma, such as inflating superbubbles and blowing bamboo propellers (RSUD Dr. M. Yunus Bengkulu 2018).

RESEARCH METHOD

This study used a quasi-experimental design, pre-test and post-test one-group design in the Edelweiss Room of RSUD DR. M. Yunus Bengkulu. The time of the study was from January 19 to February 19, 2019. The population in this study were all patients with asthma in the Edelweiss Room of RSUD DR.

M. Yunus Bengkulu in September 2017 amounted to 22 people for one month. Samples were taken as many as ten people, taken by a purposive technique based on inclusion and exclusion criteria.

RESULTS

Table. 1
Average Breathing Frequency in Children with Asthma Before
and After Inflating Super bubbles

<i>Super Bubbles</i>	Average	Frequency	Persentase
Breathing Frequency Pre			
Moderate	26,91	10	100,0
Light		0	0,0
Total		10	100,0
Breathing Frequency Post			
Moderate	25,30	8	80,0
Light		2	20,0
Total		10	100,0

Based on table 1 it can be seen that the respiratory frequency before performing superbubbles inflating therapy has an average respiratory rate of moderate (26.91). After blowing superbubbles, the average respiratory rate is moderate (25.30) in the Edelweiss Room of RSUD DR. M. Yunus Bengkulu.

Table. 2
Effect of Breathing Frequency on Children with Asthma Before and After
Super Bubbles Inflatable Therapy

Variable	N	Std. Deviation	Ratio Interval	<i>P Value</i>
Breathing Frequency Pre	10	0,90363	1.10591-2,11409	0,000
Breathing Frequency Post		1,24900		

Based on table 2, it was found that from the statistical test results obtained p-value = 0.000, it can be concluded that there is an effect of blowing superbubbles on the respiratory frequency in children with asthma in the Edelweiss Room of RSUD DR. M. Yunus Bengkulu.

DISCUSSION

Based on the study results, it is known that the respiratory rate before performing superbubbles blowing therapy has an average respiratory rate of moderate (26.91). After blowing superbubbles, the average respiratory rate is moderate (25.30) in the Edelweiss Room of RSUD DR. M. Yunus Bengkulu. This indicates that the non-pharmacological therapy by blowing superbubbles has changed in frequency.

The results of this study are in line with research by Junaidin et al., (2019) which states that there is a decrease in respiratory frequency after being given inflatable balloon therapy, this is because superbubbles therapy and inflating balloons provide distraction therapy that is useful for opening lung airflow thereby reducing shortness of breath. In addition to being a distraction therapy, blowing superbubbles trains the ability to expand the lungs and lung air capacity, increasing the effectiveness of the child's breathing and reducing the respiratory rate in asthmatic children.

These results are in line with Sutini's research (2015) which says that blowing bamboo propellers to reduce shortness of breath in asthmatics is very effective for improving pulmonary air circulation because this therapy is included in distraction and relaxation treatment to regulate breathing.

Based on the study results by conducting the at-dependent statistical test, it was found that there was an effect of blowing superbubbles on the respiratory frequency in children with asthma in the Edelweiss Room of RSUD DR. M. Yunus. This shows that the superbubbles inflatable disease has a role in decreasing the respiratory rate, resulting in a change in the respiratory rate of children with asthma. Asthmatic patients experience narrowing of the airway due to hyperactivity to certain stimuli, which causes inflammation, and this narrowing is temporary.

Play therapy blowing superbubbles is a game that requires deep inspiration and prolonged expiration. In nursing, this therapy is included in the type of pursed lips breathing therapy. The goal of this therapy is to train to live. Namely, expiration is more extended than inspiration to facilitate the expulsion of carbon dioxide from the body that is held back due to airway obstruction. Play therapy blowing superbubbles is intended for children who have problems with the respiratory system, especially asthma, with the aim that lung function in children will increase and become normal (Isnainy & Tias, 2019).

Super bubbles are games made of liquid soap or detergent, blown slowly, and produce bubbles. Researchers use superbubbles play therapy because superbubbles play therapy, in addition to providing a distraction, also provides relaxation when children blow bubbles slowly, which has an impact by opening the airflow to become large so

that it can reduce tightness (Widiyatmoko & Wulanningrum, 2018).

The results of this study are in line with Isnaini (2015) which states that the provision of play therapy blowing superbubbles on the oxygenation status of asthmatic children of Preschool Age in Melati Room 2 Moerwodadi Hospital Surakarta. Good oxygenation status can reduce the frequency of shortness of breath experienced by children so that asthma attacks in children can be reduced.

Based on Sutini's research (2015) blowing therapy such as playing with bamboo propellers and superbubbles can be done for 5 minutes with 15 blows carried out for 5 seconds for three days. The materials used are bamboo and pipettes.

Playing blowing balloons and bamboo propellers can increase the flow of air, especially during expiration; this causes a decrease in forced expiratory volume or Forced Expiration Volume (FEV1) and Peak Expiratory Flow (APE) so that it can reduce the respiratory frequency of asthmatics (Nur et al., 2019).

CONCLUSION

There is an effect of blowing superbubbles on the respiratory rate in children and asthmatics.

SUGGESTIONS

It is hoped that the client will know the cause of asthma and prevent asthma recurrence by doing independent therapy such as inflating superbubbles.

REFERENCES

- Hardina, S., & Wulandari, D. (2019). Pengaruh Konsumsi Air Hangat terhadap Frekuensi Nafas pada Pasien Asma di Puskesmas Sukamerindu Kota Bengkulu Tahun 2019. *Journal of Nursing And Public Health*, 7(2), 77-86. <https://jurnal.unived.ac.id/index.php/jnph/article/view/901>
- Hockenberry, M. J., Wilson, D., & Rodgers, C. (2016). *Essential of Pediatric Nursing*. St. Louis Missouri: Mosby
- Infodatin. (2017). *Pusat Data dan Informasi Kesehatan RI*. Jakarta
- Isnaini, I. (2015). *Pemberian Terapi Bermain Meniup terhadap Status Oksigenisasi pada anak Usia Prasekolah di Ruang Melati 2 RSUD Moerwodadi Surakarta*. <http://digilib.stikeskusumahusada.ac.id/files/disk1/27/01-gdl-annainain-1325-1-ktianna-7.pdf>
- Isnainy, U. C. A. S., & Tias, S. A. (2019). Pengaruh Posisi Condong ke Depan dan Terapi Pursed LIPS Breathing terhadap Derajat Sesak Napas Penderita Penyakit Paru Obstruktif Kronik (PPOK). *Holistik Jurnal Kesehatan*, 13(4), 389-395. <http://ejournalmalahayati.ac.id/index.php/holistik/article/view/1670>
- Junaidin, J., Syam, Y., & Irwan, A. M. (2019). The Effect of Pursed Lip Breathing and Balloon Blowing on the Strength of Respiratory Muscle, Oxygen Saturation and Respiratory Rate in Copd Patients. *Jurnal Ilmiah Keperawatan (Scientific Journal of Nursing)*, 5(1), 31-39. <https://journal.stikespemkabjombang.ac.id/index.php/jikep/article/view/211>
- Nur, A., Amin, M., Sajidin, M., & Kusnanto, K. (2019). Gambaran Arus Puncak Ekspirasi (APE) dan Kontrol Asma pada Pasien Asma. *Jurnal Penelitian Kesehatan Suara Forikes*, 10(3), 193-198. <https://forikes-ejournal.com/index.php/SF/article/view/sf10307>

- Padila, P. (2012). *Buku Ajar Keperawatan Medikal Bedah*. Yogyakarta: Nuha Medika
- Padila, P., Andari, F. N., & Andri, J. (2019). Hasil Skrining Perkembangan Anak Usia Toddler antara DDST dengan SDIDTK. *Jurnal Keperawatan Silampari*, 3(1), 244–256. <https://doi.org/10.31539/jks.v3i1.809>
- Padila, P., Andari, F. N., Harsismanto, J., & Andri, J. (2019). *Tumbuh Kembang Anak Usia Toddler Berbasis Research*. Lubuklinggau: Asra
- Panzilion, P., Padila, P., Amin, M., & Andri, J. (2020). Perkembangan Motorik Prasekolah antara Intervensi Brain Gym dengan Puzzle. *Jurnal Keperawatan Silampari*, 3(2), 510–519. <https://doi.org/https://doi.org/10.31539/jks.v3i2.1120>
- Primadyastuti, P. (2017). *Faktor-Faktor Pemicu Dominan Terjadinya Serangan Asma pada Pasien Asma*. Universitas Indonesia <http://lib.ui.ac.id/file?file=digital/20303000-T30663%20-%20Analisis%20faktor.pdf>
- RSUD Dr. M. Yunus Bengkulu. (2018). *Register Jumlah Kejadian Asma*. RSUD Dr. M. Yunus Bengkulu
- Sutini, S. (2015). *Pengaruh Signifikan Pemberian Terapi Baling-Baling Bambu terhadap Status Oksigenisasi pada Pasien Asma Anak Usia Pra Sekolah di Rumah Sakit Islam Jakarta*. <http://lib.ui.ac.id/file?file=digital/20282677-T%20Titin%20Sutini.pdf>
- Widiyatmoko, A., & Wulanningrum, D. N. (2018). *Pengaruh Terapi Bermain Super Bubbles terhadap Kecemasan akibat Hospitalisasi pada Anak Pra Sekolah di RSUD Surakarta*. Universitas Muhammadiyah Surakarta. <http://eprints.ums.ac.id/59780/>