



The Effect of Buteyko Breathing Technique on Anxiety in Patients with Bronchial Asthma

Dede Andriyani Masmala Putri¹, Budi Antoro², Hernida Warni¹

¹Department of Nursing, Universitas Mitra Indonesia, Indonesia

Correspondence author: Dede Andriyani Masmala Putri

Email: dedeandriyanimasmalaP@gmail.com

address : I. ZA. Pagar Alam No. 7, Gedong Meneng, Kec. Rajabasa, Kota Bandar Lampung, Lampung 40115.

DOI: <https://doi.org/10.56359/qj.v8i1.763>



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ABSTRACT

Introduction: Anxiety is an unpleasant feeling condition, full of restlessness, tension and abnormal hemodynamic symptoms as a result of sympathetic, parasympathetic and endocrine stimulation. One effort to reduce anxiety levels in asthma patients is with breathing relaxation techniques. This relaxation technique is known to be effective in reducing anxiety for the treatment and prevention of respiratory disorders, hyperventilation and shortness of breath. **Objective:** Purpose of this study was to determine the effect of the Buteyko breathing technique on the anxiety of bronchial asthma patients at Graha Husada Hospital Bandar Lampung.

Method: Type of research is Quantitative with a Pre-test and post-test design. The population in this study were 28 bronchial asthma patients in January 2025. So that a sample of 28 respondents was obtained. The sample technique in this study used nonprobability sampling with the Consecutive sampling technique.

Result: results obtained before being given therapy were 20 respondents (71.0%) who had mild anxiety levels. It is known that from 28 respondents, the results obtained after being given therapy were 28 respondents (100.0%). It is known that the results of the statistical test with the Paired T-test obtained $p = 0.001$ ($p < 0.05$) which means that there is an Effect of Buteyko Breathing Technique on Anxiety in Bronchial Asthma Patients at Graha Husada Hospital, Bandar Lampung.

Conclusion: It is known that the results of the statistical test with the Paired T-test obtained $p = 0.001$ ($p < 0.05$) which means that there is an influence of the Buteyko Breathing Technique on the anxiety of bronchial asthma patients at Graha Husada Hospital, Bandar Lampung.

Keywords: anxiety, bronchial asthma, buteyko breathing technique

Introduction

Bronchial asthma is a chronic inflammatory disorder of the airways that causes bronchial hyperreactivity, resulting in recurring episodic symptoms such as wheezing, shortness of breath, chest tightness, and coughing, especially at night or in the early morning. These episodic symptoms vary widely and are reversible, returning to normal with or without treatment (Ministry of Health of the Republic of Indonesia, 2018). Asthma is a chronic inflammatory process that causes mucosal edema, mucus secretion, and inflammation of the airways (B Antoro, 2016). Asthma attacks generally arise due to triggering factors, failed prevention efforts, or failed long-term asthma management. One triggering factor for asthma attacks is the client's unstable psychological condition, including anxiety. This is often ignored by clients, resulting in more frequent relapses and a worsening of the condition. This condition forms a chain in which it is difficult to determine which is the cause and which is the effect. Anxiety causes or worsens attacks; asthma attacks can cause significant anxiety in clients, while anxiety actually worsens the condition. Shortness of breath can cause anxiety because the client feels the threat of death (Zahra, et al. 2023).

The Buteyko method was discovered and developed by Professor Konstantin Buteyko of Russia. The Buteyko breathing technique emphasizes nasal breathing, breath holding, and relaxation. Buteyko teaches asthma patients to undergo a series of slow, shallow breathing exercises and encourages nasal breathing (Hartati et al., 2022). The Buteyko breathing technique aims to reduce hyperventilation by increasing carbon dioxide levels. Buteyko breathing exercises have a positive effect on reducing the severity of asthma symptoms and improving asthma control. Buteyko breathing is effective in improving respiratory control, breath holding, and reducing the work of breathing in subjects with obstructive airway disease (David et al., 2022). Physiologically, the nasal passages can filter and humidify inhaled air. Furthermore, nasal breathing produces nitric oxide (NO), which causes bronchodilation. The Buteyko breathing technique can reduce dependence on and consumption of β_2 agonists, improving the quality of life of asthma patients and improving health (Mohamed et al., 2018).

According to the World Health Organization (WHO), approximately 300 million people worldwide suffer from asthma. Data indicates that approximately 250,000 of these asthma outbreaks result in death (Natul & Yona, 2021). The majority of asthma deaths occur in low- and middle-income countries. Asthma cases continue to increase, especially in developing countries, which can be due to lifestyle changes and increased air pollution (Olaniyan et al., 2017). Data from the Indonesian Ministry of Health (2018) indicates that the prevalence of asthma in Indonesia is 4.5% of the population, or approximately 11,179,032 (Susetha, 2020). Asthma can lead to disability and premature death, particularly in children aged 10-14 and adults aged 75-79. Furthermore, in people outside these age groups, the prevalence of disability is higher. According to existing data, asthma is among the 14 leading causes of disability worldwide (Nolanda, 2019). The prevalence of asthma based on physician diagnosis among all ages, according to the Indonesian Health Ministry (2023), is 1.6% of a population of approximately 877,531, and in Lampung, the prevalence is 1.4% of a population of approximately 29,331. Meanwhile, according to the Indonesian Pulmonary Association (2018), the prevalence of asthma reaches 4.5%, with the highest prevalence in Central Sulawesi (7.8%), followed by East Nusa Tenggara (7.3%), Yogyakarta (6.9%), and South Sulawesi (6.7%). Meanwhile, the prevalence of asthma based on physician diagnosis among all ages, according to the Indonesian Ministry of Health (2018), in Lampung Province, is 68% of adults with recurrent bronchial asthma.

Based on pre-survey data conducted on December 31, 2024, from medical records at Graha Husada Hospital in Lampung, 415 patients were found to have been diagnosed with bronchial asthma over a one-year period (January-December 2024). The pre-survey, conducted among 10 patients, revealed that during the asthma attack, the patients experienced severe shortness of breath and anxiety. They were given pharmacological treatment with a nebulizer, but the shortness of breath only decreased, but they still felt anxious. Shortness of breath can cause anxiety and worsen asthma attacks, leading to significant anxiety in patients, while anxiety can actually worsen the shortness of breath and can lead to anxiety due to the perceived threat of death. Researchers believe additional non-pharmacological therapies are needed to reduce anxiety in asthma patients. Researchers reviewed several journals highlighting the Buteyko breathing technique as one of the most effective techniques for reducing anxiety in asthma patients, and further examined its effectiveness in asthma patients at Graha Husada Hospital in Bandar Lampung.

Based on this phenomenon, the researcher is interested in conducting research on the effect of the Buteyko breathing technique on the anxiety of bronchial asthma patients at Graha Husada Hospital, Bandar Lampung.

Objective

Anxiety is an unpleasant feeling condition, full of restlessness, tension and abnormal hemodynamic symptoms as a result of sympathetic, parasympathetic and endocrine stimulation. One effort to reduce anxiety levels in asthma patients is with breathing relaxation techniques. This relaxation technique is known to be effective in reducing anxiety for the treatment and prevention of respiratory disorders, hyperventilation and shortness of breath. Purpose of this study was to determine the effect of the Buteyko breathing technique on the anxiety of bronchial asthma patients at Graha Husada Hospital Bandar Lampung.

Method

This study employed a quantitative research design using a pre-experimental one-group pretest, posttest approach to determine the effect of the Buteyko breathing technique on anxiety levels among patients with bronchial asthma. The study was conducted at Graha Husada Hospital in January 2025.

The population consisted of all bronchial asthma patients who received treatment at the hospital during the study period, totaling 28 patients. The sample size was 28 respondents selected using a non-probability sampling method with a consecutive sampling technique. Inclusion criteria included patients diagnosed with bronchial asthma, conscious and cooperative patients, patients willing to participate in the study, and patients experiencing mild to moderate anxiety levels. Patients with severe respiratory distress or incomplete participation during the intervention period were excluded from the study.

The intervention consisted of the Buteyko breathing technique administered according to a standardized procedure. Before the intervention, respondents' anxiety levels were measured using an anxiety assessment questionnaire. After the implementation of the Buteyko breathing technique, posttest measurements were conducted to assess changes in anxiety levels. The intervention was carried out under the supervision of the researcher and trained health personnel.

Data analysis was performed using univariate and bivariate analyses. Univariate analysis was used to describe respondent characteristics and anxiety level scores before and after the intervention. Bivariate analysis was conducted using the Paired Sample t-test to

determine the effect of the Buteyko breathing technique on anxiety levels among bronchial asthma patients. Statistical significance was determined at a p-value <0.05 with a 95% confidence interval. This study received ethical approval from the relevant health research ethics committee, and informed consent was obtained from all respondents prior to data collection.

Result

Table 1. Frequency Distribution Based on Patient Anxiety Levels Before and After Treatment with the Buteyko Breathing Technique

	N	Mean	Standar Deviation	p-value
Before Therapy	28	26.11	0.875	0.001
After Therapy	28	17.25	2.102	

Based on Table above, the analysis using the Paired T-Test yielded a p-value of 0.001 with an α value of 0.05. This means that the p-value $<\alpha$, thus rejecting the null hypothesis (H_0) and accepting the alternative hypothesis (H_a), indicating that the Buteyko breathing technique has an effect on the anxiety levels of bronchial asthma patients at Graha Husada Hospital, Bandar Lampung.

Discussion

The Effect of Buteyko Breathing Technique on Anxiety in Bronchial Asthma Patients in the Internal Treatment Room of Pelamonia Class II Hospital, Makassar, stated that the results of the study indicate an effect of Buteyko breathing technique on anxiety levels in bronchial asthma patients. The Paired T-Test showed a p-value of 0.000 and an α -value of 0.05.

Based on the research conducted by the researcher, the majority of respondents experienced a decrease in anxiety due to the influence of Buteyko breathing technique given to bronchial asthma patients at Graha Husada Hospital, Bandar Lampung. This is because, prior to the researcher's therapy, patients at the hospital had not received optimal Buteyko breathing technique therapy. Consequently, many patients experienced anxiety. Some respondents also did not receive information or Buteyko breathing therapy, but were satisfied with the service at the hospital. From the analysis of the above research, it can be concluded that the greater the administration of Buteyko breathing technique, the lower the patient's anxiety level. Conversely, the less the administration of Buteyko breathing technique, the higher the patient's anxiety level.

The Buteyko Method is a scientific and comprehensive complementary therapy for improving breathing in asthmatics, discovered and developed by Professor Konstantin Buteyko of Russia. The Buteyko breathing technique emphasizes nasal breathing, breath holding, and relaxation. Buteyko teaches asthma patients to undergo a series of slow, shallow breathing exercises, encouraging nasal breathing (Hartati, Kuswati, Handoyo, & Haryati, 2022).

Based on research by Antoro (2016), statistical tests showed no difference in the mean increase in peak expiratory flow after asthma exercises between the intervention and control groups ($p=0.616, >0.05$).

Physiologically, the nasal passages filter and humidify inhaled air. Furthermore, nasal breathing produces nitric oxide (NO), which causes bronchodilation. The Buteyko breathing

technique can reduce dependence on and consumption of β_2 agonists, improve the quality of life of asthma patients, and enhance overall health (Mohamed, Elmetwaly, & Ibrahim, 2018). This can help patients become independent in maintaining their health, especially for patients who do not want to deal with anxiety using pharmacological therapy.

Conclusion

It is known that the results of the statistical test with the Paired T-test obtained $p = 0.001$ ($p < 0.05$) which means that there is an influence of the Buteyko Breathing Technique on the anxiety of bronchial asthma patients at Graha Husada Hospital, Bandar Lampung.

Authors' contribution

Each author contributed equally in all the parts of the research. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

Conflict of interest

The researchers stated that there is no conflict of interest related to the implementation and publication of the results of this research. The entire research process, from planning, data collection, analysis, to report preparation, was carried out independently without any influence or pressure from any third party. A commitment to research ethics is upheld throughout the research process, ensuring transparency, accuracy and honesty in reporting results. Respondents' participation was voluntary with informed consent, and their confidentiality and privacy were maintained in accordance with applicable research ethics standards. With this statement, researchers hope that the research results can be trusted and used as a valid reference for the development of science and health practices related to ethnomedicine and reproductive health.

Funding

This research is not funded by any party and is not intended for any financial gain.

References

1. Abidah & Hidayah (2023). "Teknik Buteyko Dan Teknik Latihan Pernafasan Diafragma Terhadap Puncak Laju Aliran Pernafasan pasien Asma". Jurnal Ilmiah Kesehatan STIKES Majapahit. Hospital Majapahit : Malang
2. Afgani & Hendriani, 2020. "Diagnosis Dan Manajemen Terapi". <https://doi.org/10.24198/farmaka.v18i2.26222>
3. Agnes (2016). "Pengaruh Teknik Pernafasan Buteyko Terhadap kecemasan Pada Pasien Asma Bronchial Di Ruang Perawatan Interna Rumah Sakit TK II Pelamonia Makassar". STIK Stella Maris : Makassar
4. Antoro (2016). "Pengaruh Senam Asma Terstruktur Terhadap Peningkatan Arus Puncak Ekspirasi (APE) Pada Pasien Asma". https://scholar.google.com/scholar?hl=id&as_sdt=0%2C5&q=asma+bronkial+menurut+budi+antoro&btnG=#d=gs_qabs&t=1735826500988&u=%23p%3DevsASKDfNeoJ
5. Arikunto (2016). "Proosedur Penelitian Suatu pendekatan Praktik". Jakarta : Rineka Cipta
6. Chrisnawati, dkk (2019). "Aplikasi Pengukuran Tingkat Kecemasan Berdasarkan Skala Hars Berbasis Android". V (2), 277-282. <https://doi.org/10.31294/jtk.v4i2>

7. David, dkk (2022). "Pengaruh Teknik Pernafasan Buteyko Terhadap Kualitas Hidup Asma Bronkial".
<https://journal.universitaspahlawan.ac.id/index.php/jkt/article/download/19891/15943/72868>
8. David & Patil, 2022. "Immediate Effect of Buteyko Breathing Technique Versus Stacked Breathing Technique in Asthma Patients. International Journal of Health Sciences and Research". Vol, 12 : Issu: 6: June2022, ISSN : 2249-9571
9. Fetriyah, dkk (2023). "Pengalaman Keluarga Dalam Merawat Anak Dengan Asma Di UGD". Universitas Sari Mulia : Kalimantan Selatan. Jurnal Ilmiah Permas : Jurnal Ilmiah STIKes Kendal
10. GT Tumigolong (2016). "Hubungan Tingkat Kecemasan Dengan Serangan Asma Pada Penderita Asma".
<https://ejournal.unsat.ac.id/v3/index.php/jkp/article/download/14071/13647/28081>
11. Hartati, dkk (2022). "The Effect of Buteyko Complemter Technique on Recurrence Frequency in Patients Asthma Bronchiale". Italianish. ISSN : 0171-4996, Vol. 12, No. 2, 2022, pp 127-132
12. Haryati, dkk (2022). "Pengaruh Teknik Pernafasan Buteyko Terhadap Kualitas Hidup Asma Bronkial".
<https://journal.universitaspahlawan.ac.id/index.php/jkt/article/download/1981/15943/72868#:~:text=Teknik%20pernafasan%20Buteyko%20merupakan%20teknik,%2C%20%26%20Haryati%2C%202022>
13. Hasibuan (2021). "Manajemen Sumber Day manusia". (Edisi Revisi) : Bumi Aksara
14. Irman (2019). "Asuhan Keperawatan Pada Klien Dengan Gangguan Sistem Pernafasan". 50-60
15. Kementerian Kesehatan RI, 2018. " Penyakit Tidak Menular Indonesia Asma Bronkial".
<https://p2ptm.kemkes.go.id/kegiatan-p2ptm/subdit-penyakit-parukronik-dan-gangguan-imunologi/asma-bronkial-faq>
16. Mohamed,dkk (2018). "Pengaruh Teknik Pernafasan Buteyko Terhadap Kontrol Asma Bronkial". <https://ojs.stikessaptabakti.ac.id/jrmk/article/download/18/18/75>
17. Muttaqin (2018). "Buku Ajar Asuhan keperawatan Klien dengan Gangguan Persarafan. Jakarta : Salemba Medika
18. Natul & Yona (2021). "Buteyko Breathing Technique (BBT) Terhadap Perubahan Nilai Peak Expiratory Flow Rate (Perf) Dan Kualitas Hidup Penderita Asma". Jurnal Keperawatan Silampari, 5 (1), 478-487. <https://doi.org/DOI:https://doi.org/10.31539/jks.v5i1.2965>
19. Nining (2023). "Self Healing Dalam Menurunkan Kecemasan Pada Kehamilan". Technical Report. Pustaka Panasea, Yogyakarta
20. Sujarweni (2022). "Metodologi Penelitian". Yogyakarta : PT Pustaka Baru
21. Susetha (2020). "Asuhan Keperawatan Pada Anak Asma Bronkial dengan Ketidakefektifan Bersihan Jalan Nafas di Ruang Melati Rumah sakit Umum daerah Ciamis". Universitas Bhakti Kencana : Bandung
22. Sutrisna (2023). "Pengaruh Teknik Pernafasan Buteyko Terhadap Kualitas Hidup Asma Bronchial". Universitas Bengkulu : Bengkulu
23. Zahra, dkk (2023). "Kualitas Hidup Pasien Asma Penggunaan Inhaler di Instansi Rawat Jalan RSUD Sultan Suriansyah".
<https://jurnsl.unw.ac.id/index.php/ijpnp/article/download/2589/2067/11058>