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The Effect Of Combination Of Ginger And Honey Combination On Asthma Patients With Ineffectiveness Of Breath Pattern In Pujidadi Binjai Village In 2023

Hanna Ester Empraninta
Akademi Keperawatan Kesdam I/BB Binjai

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ABSTRACT

Asthma is a chronic disease that attacks the respiratory tract with marked shortness of breath due to narrowing of the airways. One of the non-pharmacological measures to reduce asthma is the administration of a combination of ginger and honey boiled water. The aim of the study was to identify the effect of consuming a combination of ginger and honey boiled water on asthma sufferers. This study uses a quasi-experimental research design approach with two groups pretest posttest. The sample of this study were 30 asthma patient respondents who were undergoing treatment which were divided into two groups, 15 intervention groups and 15 control groups. The sampling technique uses the Slovin formula. Research data collection used demographic data, informed consent sheets, Asthma Control Test (ACT) questionnaires, which were combined using a modified combination of ginger and honey boiled water. Data were analyzed using descriptive statistics, paired t test and independent t test. The results showed that there was an effect of consuming a combination of ginger and honey boiled water on ineffective breathing patterns, post-test intervention group (t = -23,503, p=0,001) and post-test control group (t = -5,281; p=0,001) and there was a significant difference significantly to the ineffectiveness of breathing patterns between the post-test of the intervention group and the post-test of the control group after the intervention was carried out by consuming a combination of ginger and honey boiled water for ineffective breathing patterns, the intervention group and the control group after filling out the Asthma Control Test (ACT) questionnaire obtained a value (t = 4,707, p=0,001). The results of this study can recommend consuming a combination of ginger and honey boiled water as a non-pharmacological measure to help reduce the ineffective breathing pattern of asthma sufferers.

Email:
hannaesterempraninta17@gmail.com

INTRODUCTION

Asthma is a chronic inflammatory process of the respiratory tract that involves many of its cells and elements. This chronic inflammatory process causes the respiratory tract to become hyperresponsive, thereby facilitating the occurrence of bronchoconstriction, edem, glandular hypersecretion, which results in restriction of airflow in the respiratory tract with periodic clinical manifestations in the form of wheezing, shortness of breath, chest heaviness, coughing, especially at night or early morning/dawn (Humaidy, R. S.2020).

Data from the World Health Organization (WHO, 2019) estimates that the prevalence of asthma incidence in 2019-2023 reaches around 334 million sufferers. Asthma is a health problem worldwide, affecting approximately 7.2%, which is 6% occurring in adults and 10% in children (Putri, A.A. 2021).

Based on data from the Ministry of Health in 2020, it is estimated that the number of Asthma prevalence in Indonesia is 4.5% of the total population of Indonesia or as many as 12 million or more and ranks fifth in non-communicable diseases. There are 16 provinces that have a prevalence of asthma that exceeds the national figure. The top 3 provinces are DI Yogyakarta (4.5%), East Kalimantan (4%), and Bali (3.9%). Meanwhile, the province with the lowest prevalence of asthma is North Sumatra (1.04%).

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The results of the Riskesdas (2018) survey showed that asthma sufferers in North Sumatra were 1.04%. With a prevalence of 0.14 - 2.20%. The highest incidence rate is found in Pematang Siantar City (2.20%), Langkat Regency (2.01%), Serdang Bedagai Regency (1.53%), Samosir Regency (1.44%), and Asahan Regency (1.21%) (Ministry of Health of the Republic of Indonesia, 2018).

Meanwhile, in Binjai City, the number of asthma sufferers ranks twentieth out of each region in North Sumatra. Data sourced from the Binjai City Health Office in 2018 that the number of asthma sufferers is around 0.64%, namely 1.04% occurs in men and 1.03% in women (Binjai City Health Office, 2018).

The results of the initial survey from the Health Center in Pujidadi Binjai Village showed that there were 33 people suffering from asthma in 2023, and only 30 people were willing to conduct research. The increase in the prevalence of Asthma is due to the fact that the respiratory tract of people with asthma tends to be more sensitive than in patients who do not have asthma. That is why when the lungs of people with asthma are irritated by one of the triggers, the respiratory muscles will become stiff and the airways will narrow. Some of the triggers include cigarette smoke, exposure to chemicals, animal dander, or even cold air (Irodah, N. 2021).

Symptoms of asthma are wheezing, shortness of breath, chest heaviness, and a variable cough as well as varying airflow limitations. Recurrent wheezing and/or recurrent chronic coughing is the starting point for establishing the diagnosis. Supporting examinations to establish the diagnosis such as lung function tests (Perdani, R.R.W. 2019).

Therefore, traditional medicine in the form of plants or natural herbs that have good properties for asthma sufferers is needed. One of them is the use of Ginger and Honey. How Ginger works to relieve asthma is actually not known for sure. However, experts suspect that Ginger may help reduce the allergic response by lowering IgE levels in the body. IgE or immunoglobulin E is an antibody produced by the immune system to fight substances that are suspected of threatening the body. When an allergic reaction occurs, the body will produce more IgE. The symptoms of Asthma itself are closely related to allergic reactions. When IgE levels decrease, the allergic reactions that appear will also slowly decrease (Taufik Hidayat, S.Si, 2022).

Research from Meida Jelsa (2019), "The Effectiveness of Ginger Therapy to Reduce Symptoms of Bronchial Asthma Reviewed from Medicine and Islam" explains that the administration of Ginger is very good to be used as an intervention to cure Asthma reviewed from medicine and Islam. According to medicine, from the results of research on Ginger, Ginger has various components such as 6-shigaol and 8-gingerol which have a bronchodilating effect. The use of Ginger in Asthma patients reduces asthma symptoms in the form of causing reduced wheezing, reduced chest pressure and reduced coughing at night. Ginger also suppresses hypersensitivity reactions effectively. According to Islam, it is permissible to consume Ginger for Asthma because it has great benefits and mild side effects, Ginger is a halal food to consume. Medicine and Islam are in line that consuming Ginger for Asthma can be one of the alternatives to reduce Asthma symptoms.

Not only ginger has good properties to support healing for asthma sufferers. Honey also plays a role as a herbal or natural asthma medicine. The abundant antioxidant content in honey is believed to help fight inflammation and increase the immunity of asthma sufferers (Taufik Hidayat, S.Si, 2022).

Supported by the research of Nurhaeni & Agustini, (2015) quoted from Domisari, R, M.W (2018), "Application of Synergy of Ginger Basil Leaves and Honey in Bronchial Asthma Patients with Ineffective Respiratory Clearance Disorders" explained that thick honey has natural antibiotic benefits that will stop the growth of bacteria and strengthen white blood cells, while the sweetness in honey will trigger the salivary glands to produce more saliva and can lubricate the respiratory tract which useful for relieving coughs, reducing inflammation in the bronchial ducts, breaking down mucus as well as boosting immunity and accelerating healing. Research conducted by Ramadhani (2014) quoted from Mutoharoh, E. (2018) "Combination of Ginger and Honey Boiled Water in Mrs. N with Risk of Ineffectiveness of Bronchial Asthma Breathing Patterns" explained that the administration of Honey

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Ginger drink can reduce shortness of breath. This means that there is a significant influence between the mean level of shortness of breath in the experimental group before and after being given Honey Ginger drink so that it can be concluded that the administration of Honey Ginger drink is effective in reducing ineffective breathing patterns such as shortness of breath.

Respiratory pattern ineffectiveness disorder is the inability of the respiratory system processes : inspiration and expiration that do not provide adequate ventilation (NANDA, 2018-2020). This change in breathing pattern is one of the disorders of respiratory function that causes a person to experience disturbances in meeting the oxygen needs for his body, for example there are blockages that block the airways, fatigue of the respiratory muscles, decreased energy, fatigue, pain, and neuromuscular dysfunction. Usually, patients with this condition experience changes in respiratory frequency, changes in pulse (frequency, rhythm, and quality), and chest tightness.

Tietze (2015) research quoted from Domisari, R.M.W (2018), "Application of Synergy of Ginger Basil Leaves and Honey in Bronchial Asthma Patients with Ineffective Respiratory Clearance Disorders" explains that taking 1 tablespoon of honey and ginger decoction at bedtime which is believed that the sweetness of honey triggers the salivary glands to produce more saliva that can lubricate the airways so that breathing patterns return to normal, reduces coughing and can reduce inflammation in the bronchial tubes which helps break down mucus and as an antioxidant that fights inflammation and boosts immunity.

METHOD

This study uses a quantitative approach with a quasi-experimental two-group pretest posttest design, which compares the intervention group and the control group before and after the intervention is given (Polit & Beck, 2012). The purpose of this study is to determine the effect of the consumption of a combination of ginger and honey boiled water on asthma sufferers with ineffective breathing patterns. Respondents were divided into two groups, where both groups underwent a pretest first. Furthermore, the intervention group was given treatment, while the control group did not receive the intervention. After the process was completed, the two groups again underwent a posttest to evaluate the changes that occurred.

This research was conducted in Pujidadi Binjai Village in the period May to July 2023. The population in this study is asthma patients undergoing outpatient treatment in the village, with a total of 33 patients whose data were obtained from the Pujidadi Binjai Health Center and the Binjai Estate Health Center in the last one year (May 2022 – May 2023) (Polit & Beck, 2012). The sample in this study is part of the population, namely asthma sufferers who live in Pujidadi Binjai Village (Polit & Beck, 2012). The number of samples was determined using the Slovin formula with an error tolerance level (d) of 5% (0.05). Based on calculations, the number of samples obtained was 30 respondents from a total population of 33 asthma sufferers.

This study establishes two criteria in sample selection, namely inclusion and exclusion criteria. The inclusion criteria include outpatient asthma patients aged 45-65 years, both male and female, who are conscious, cooperative, and have had asthma for more than three years. Patients must also be able to read, write, communicate well, and have never received similar interventions other than researchers. In addition, they must be willing to be followed directly by the researcher, be contacted via mobile phone, and sign informed consent. Meanwhile, the exclusion criteria in this study included respondents who unilaterally stopped participation, did not come for control according to procedures, or died during the study.

The data collection method in this study involves the use of demographic data, informed consent, and Asthma Control Test (ACT) questionnaires to measure the effectiveness of intervention for the consumption of ginger and honey boiled water on the ineffectiveness of breathing patterns of asthma patients. The ACT questionnaire was filled out by respondents from the intervention and control groups on the first day before the intervention and repeated at the fourth week. The assessment in the

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questionnaire uses a Likert scale with a total score ranging from 10 to 40, which is categorized as good (31–40), fair (21–30), and poor (10–20). The data collection technique is carried out through the stages of preparation, implementation, and evaluation. In the preparation stage, the researcher took care of licensing and identified samples at the Pujidadi Binjai Health Center (intervention group) and Binjai Estate Health Center (control group). The implementation stage consists of pre-test, intervention, and post-test. The intervention group received the ginger and honey boiled water consumption therapy for eight sessions in four weeks, while the control group only filled out questionnaires without intervention. The evaluation was carried out by post-test using the ACT questionnaire, which showed the difference in results between the two groups.

The measurement method in this study was carried out through the collection of demographic data using a questionnaire that included the identity and characteristics of the respondents, such as age, gender, marital status, ethnicity, religion, education, occupation, monthly income, length of asthma, and asthma-related health counseling. The main instrument used is the Asthma Control Test (ACT) questionnaire, which aims to measure the level of ineffectiveness of breathing patterns of asthmatics. The assessment scale in the ACT ranges from 10 to 40, with the assessment categories being good (31–40), fair (21–30), and poor (10–20).

In data analysis, there are several stages that are carried out. First, the editing stage, which is checking the questionnaire to ensure the completeness and suitability of the data before analysis. Second, the coding stage, where each variable is given a numerical code to facilitate data processing. Next, the data entry stage, which is to enter the data that has been collected into a database or master table. After that, data cleaning is carried out, which is a re-check to ensure that there are no errors in providing codes or incomplete data. The next process is data processing, where the data that has been collected is analyzed by statistical methods, both univariate and bivariate.

In data analysis, univariate analysis is used to describe the research variables by presenting data in the form of frequency distribution tables, mean values, and standard deviations. Meanwhile, bivariate analysis was used to test the relationship between the two variables and compare the results of the pre-test and post-test between the intervention group and the control group. The statistical tests used in this study included an independent t-test to assess the differences between the two groups and a paired t-test to evaluate the differences before and after the intervention in the same group. Data normality tests were carried out to ensure normal data distribution, while homogeneity tests were carried out to assess the equivalence of variables between the intervention group and the control group.

In addition, this study also considers ethical aspects in its implementation. The principle of autonomy is applied by giving respondents the freedom to participate without coercion, as well as providing a complete explanation of the objectives, procedures, and benefits of the research before they agree to participate by signing informed consent. The principle of confidentiality is maintained by not including the identity of the respondents in the questionnaire and keeping their personal information confidential. Furthermore, the principle of beneficence is applied by ensuring that the intervention provided can provide benefits for respondents, especially in improving the self-care behavior of asthma sufferers. Finally, the principle of justice is fulfilled by ensuring that the selection of respondents is carried out fairly, without discrimination, and based on the criteria of the sample that has been set.

RESULTS AND DISCUSSION

Result

The Pujidadi Binjai Health Center has a special program called Prolanis (Chronic Disease Management Program) in collaboration with BPJS Kesehatan. This program is carried out eight times a month, including education, elderly gymnastics, and free health checkups. In this activity, the researcher participated in an intervention on the effect of ginger and honey boiled water consumption on asthma sufferers with ineffective breathing patterns. Before the intervention, the researcher discussed with the

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head of the Health Center and the Prolanis team to ensure the effectiveness of the intervention in helping the patient heal.

In addition to the Pujidadi Health Center, the Binjai Estate Health Center also has a high number of asthma sufferers, especially in the elderly. Located on Jalan Samanhudi No.317, South Binjai, this health center has a special program for asthma patients, which is held every Thursday in the second and fourth weeks. The program includes elderly gymnastics, weekly education, and free checkups and treatments. In contrast to the Pujidadi Health Center, at the Binjai Estate Health Center, there is no intervention in the consumption of ginger and honey boiled water, but only the provision of questionnaires and health promotion related to asthma. This program is expected to reduce the incidence of asthma in the region.

Univariate Analysis Results

The research conducted at the Pujidadi Binjai Health Center and the Binjai Estate Health Center involved 30 respondents, consisting of 15 intervention groups and 15 control groups. The characteristics of respondents with asthma were analyzed based on age, gender, marital status, ethnicity, religion, education, and occupation. The results of this study provide a detailed overview of the demographic profile of the respondents, which can be the basis for understanding the factors that affect asthma conditions and the effectiveness of the interventions provided.

Table 1. Distribution of Frequency and Percentage Based on Respondent Characteristics at Pujidadi Binjai Health Center (n = 30)

Data	Intervention Group (n=15)		Control Group (n=15)	
	F	%	F	%
Age				
Early Elderly (46 – 55 Years Old)	10	66,7	12	80,0
Late Elderly (56 – 65 years old)	5	33,3	3	20,0
Gender				
Man	6	40,0	5	33,3
Woman	9	60,0	10	66,7
Marital Status				
Unmarried	-	-	-	-
Marry	12	80,0	10	66,7
Janda/Duda	3	20,0	5	33,3
Tribe				
Batak	1	6,7	2	13,3
Javanese	11	73,3	10	66,7
Malay	-	-	-	-
Karo	2	13,3	2	13,3
Aceh	1	6,7	1	6,7
Other	-	-	-	-
Religion				
Islam	13	86,7	12	80,0
Protest	1	6,7	2	13,3
Catholic	1	6,7	1	6,7
Education Level				
No School	-	-	-	-
SD	-	-	-	-

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JUNIOR	2	13,3	3	20,0
High School/Vocational School	13	86,7	12	80,0
D3	-	-	-	-
D4/S1	-	-	-	-
Other	-	-	-	-
Work				
Not Working	-	-	-	-
Civil Servants/SOEs	-	-	-	-
A	-	-	-	-
Laborer	12	80,0	12	80,0
Other	3	20,0	3	20,0
Income				
< Rp.1.500.000	15	100,0	15	100,0
> Rp.1.500.000	-	-	-	-
Long Suffering from Asthma				
< 3 Years	-	-	-	-
> 3 Years	15	100,0	15	100,0
Asthma Health Counseling				
Yes	-	-	-	-
Not	15	100,0	15	100,0

Based on Table 1, the majority of respondents in the intervention group (66.7%) and control (80.0%) were of early elderly age (46-55 years). Most of the respondents were female, with 60.0% in the intervention group and 66.7% in the control group. The highest marital status was married, with 80.0% in the intervention group and 66.7% in the control group. The majority of respondents were from the Javanese tribe, with 73.3% in the intervention group and 66.7% in the control group. Islam was the majority, namely 86.7% in the intervention group and 80.0% in the control group. The most education was high school, with 86.7% in the intervention group and 80.0% in the control group. The majority of respondents worked as laborers (80.0% in both groups) with an income of < Rp 1,500,000 (100% in both groups). All respondents (100%) in both groups had had had asthma for more than three years and had never received health counseling about asthma.

Table 2. Distribution of Frequency and Percentage of Ineffectiveness of Intervention Pre-Test Breathing Patterns in the Intervention Group (n=15)

Scale	Categories Ineffectiveness of Breathing Patterns	(n=15)	%
10-20	Less	9	60,0
21-30	Enough	6	40,0
31-40	Good	0	0

Based on Table 2, before the intervention, the majority of respondents in the intervention group experienced ineffectiveness of breathing patterns in the less than 9 people (60.0%) category, while the adequate category was 6 people (40.0%). None of the respondents had a good breathing pattern (0%).

Table 3. Distribution of Frequency and Percentage of Ineffectiveness of Intervention Post Test Breath Patterns in the Intervention Group (n=15)

Scale	Categories Ineffectiveness of Breathing Patterns	(n=15)	%
10-20	Less	0	0

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21-30	Enough	8	53,3
31-40	Good	7	46,7

Based on Table 3, after the intervention, the majority of respondents in the intervention group experienced ineffectiveness of adequate breathing patterns as many as 8 people (53.3%) and good as many as 7 people (46.7%). The category of ineffectiveness of less breathing patterns was not found anymore (0%).

Table 4.Distribution of Frequency and Percentage of Ineffectiveness of Pre-Test Breath Patterns in the Control Group (n=15)

Scale	Categories Ineffectiveness of Breathing Patterns	(n=15)	%
10-20	Less	10	66,7
21-30	Enough	5	33,3
31-40	Good	0	0

Based on Table 4, before being given the pre-test, the majority of respondents in the control group experienced ineffectiveness of breathing patterns as many as 10 people (66.7%) and enough as many as 5 people (33.3%). The category of ineffectiveness of good breathing patterns was not found (0%).

Table 5. Distribution of Frequency and Percentage of Ineffectiveness of Post Test Breath Patterns in the Control Group (n=15)

Scale	Categories Ineffectiveness of Breathing Patterns	(n=15)	%
10-20	Less	8	53,3
21-30	Enough	7	46,7
31-40	Good	0	0

Based on Table 5, after being given a post test, the control group was dominated by respondents with a category of ineffective breathing patterns of 8 people (53.3%) and a category of ineffective breathing patterns of 7 people (46.7%). The category of ineffectiveness of good breathing patterns was not found (0%).

Bivariate Analysis Results

Table 6. Average Value of Ineffectiveness of Pre-Test and Post Test Breathing Patterns in the Intervention Group (n=15)

Ineffectiveness of Breathing Patterns	Intervention Groups		*T*	***p value***
	Mean	*SD*		
Pre-test	20,20	5,454	-23,503	0,001
Post-test	31,20	6,178		

Based on Table 6, the paired t-test showed that the average ineffectiveness of breathing patterns in the intervention group was higher after participating in the intervention of the combination of ginger and honey consumption (Mean = 31.20, SD = 6.178) compared to before the treatment (Mean = 20.20, SD = 5.454). The test results showed a significant difference between the pre test and post test of the intervention group with a p-value of 0.001 (t = -23.503; p = 0.001).

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Table 7. Average Value of Ineffectiveness of Pre Test and Post Test Breathing Patterns in the Control Group (n=15)

Ineffectiveness of Breathing Patterns	Control Group		*T*	*p value*
	Mean	*SD*		
Pre-test	19,27	4,818	-5,281	0,001
Post-test	21,07	5,599		

Based on Table 7, the paired t-test showed that the average ineffectiveness of breathing patterns in the control group during the pre-test (Mean = 19.27, SD = 4.818) and post-test (Mean = 21.07, SD = 5.599) showed a significant difference with a p-value of 0.001 (t = -5.281; p = 0.001).

Table 8. Effect of Intervention on Consumption of Combination of Ginger and Honey Boiled Water in Asthma Patients with Respiratory Ineffectiveness Disorder Between Post Test Intervention Group Following Intervention and Post Test in Control Group (n=30)

Variable	Intervention Groups		Control Group		*t*	*p value*
	Mean	*SD*	*Mean*	*SD*		
Ineffectiveness of Breathing Patterns	31,20	6,178	21,07	5,599	4,707	0,001

Based on Table 8, the analysis using the Independent t-test showed that the average ineffectiveness of breathing patterns in the intervention group (Mean = 31.20, SD = 6.178) was higher than that of the control group (Mean = 21.07, SD = 5.599). This difference was significant with a p-value of 0.001 (t = 4.707, p = 0.001).

Discussion

This study aims to identify the effect of consumption of a combination of ginger and honey boiled water on asthma sufferers with ineffective breathing pattern disorders in Pujidadi Binjai Village in 2023. The focus of this study discussion is the results of research related to the characteristics of respondents and the assessment of the average ineffectiveness of breathing patterns before and after the intervention in the intervention group and control in asthma patients.

Characteristics Responden

This study identified various characteristics of respondents which included age, gender, marital status, ethnicity, religion, education, occupation, monthly income, length of suffering from asthma, and asthma health counseling.

1. Age. The results showed that the majority of respondents in the intervention and control groups were of early elderly age (46-55 years), with 66.7% in the intervention group and 80% in the control group. According to Cardova et al. (2011), age affects the incidence of asthma because as we get older, lung function will decrease.
2. Gender. More than half of the respondents were female, namely 60% in the intervention group and 66.7% in the control group. According to Maeve O'Connor et al. (2021), asthma is more common in women after puberty and more severe in older women.
3. Education. The majority of respondents had a high school education, with 86.7% in the intervention group and 80% in the control group. According to Kalsum & Nur (2021), education affects a person's knowledge and attitude in managing asthma.
4. Work. Most respondents worked as laborers, 80% in both groups. This job is a health risk because workers who work on night shifts are prone to asthma due to cold air and fatigue (Sepriani, 2019).
5. Income. Most respondents have an income of less than Rp 1,500,000, which can affect access to treatment and health information related to asthma. Kirilmaz (2013) stated that low income can

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limit a person's ability to obtain optimal health services, although Subait's (2016) research in Saudi Arabia shows that income does not necessarily affect patient satisfaction with health services.

6. Long suffering from asthma. The majority of respondents in both groups had had asthma for more than 3 years (100%), which shows the importance of rapid and appropriate disease management to prevent further complications.

Ineffectiveness of Pre-Test and Post Test Breathing Patterns in the Intervention Group

This study discussed the ineffectiveness of breathing patterns in asthma patients measured using the Asthma Control Test (ACT) questionnaire, which consisted of 10 questions covering asthma degree, allergen triggers, physical activity, and therapy given. The assessment in the ACT questionnaire uses a 4-point scale, with favorable (1-4) and unfavorable (4-1) statements, where the highest score indicates better asthma control. ACT questionnaire scores range from 10 to 40, with categories: 31-40 = Good, 21-30 = Fair, and 10-20 = Less (Schmitt et al., 2016).

The results showed a significant difference in the ineffectiveness of breathing patterns in the intervention group after treatment. Before the intervention, the average value of ineffectiveness of breathing patterns was Mean=20.20 (SD=5.454), while after the intervention the average value increased to Mean=31.20 (SD=6.178). The paired t-test showed a significant difference (t = -23.503; p = 0.001).

The increase in the ineffectiveness of higher breathing patterns in the intervention group was due to a structured intervention in the form of consumption of ginger and honey boiled water. During the visit to the health center, the patient actively participated in the intervention session. A. Novitasari (2015) stated that ACT can be used to assess the quality of life of asthma sufferers, which is related to the level of asthma control.

The results of this study are also consistent with the findings of Mutoharoh E. (2018), which explains that the administration of ginger and honey drinks is effective in reducing shortness of breath. Thus, the consumption of ginger and honey boiled water plays a significant role in improving the breathing patterns of asthma sufferers and reducing the ineffectiveness of breathing patterns, especially shortness of breath.

Ineffectiveness of Pre Test and Post Test Breath Patterns in the Control Group

The statistical results showed a difference in the ineffectiveness of breathing patterns between the pre test and the post test in the control group. Before the intervention, the average value of ineffectiveness of breathing patterns was Mean=19.27 (SD=4.818), while after the intervention the average value increased to Mean=21.07 (SD=5.599). The paired t-test showed a significant difference (t = -5.281; p = 0.001).

The increase in the ineffectiveness of breathing patterns in the control group was lower than that of the intervention group, which was due to the fact that the control group did not receive an intervention in the form of ginger and honey boiled water that was structured during the health center visit.

Difference in Ineffectiveness of Breathing Patterns in the Intervention Group and Control Group Post Test Intervention Effect of Ginger and Honey Boiled Water Consumption

The analysis showed that the ineffectiveness of breathing patterns in the post test intervention group was higher (Mean=31.20; SD=6.178) compared to the control post test group (Mean=21.07; SD=5,599). The statistical results of the t-test showed a significant difference between the two groups with a t-value = 4.707; p = 0.001.

The increase in the ineffectiveness of breathing patterns in the intervention group showed a positive effect of consumption of ginger and honey boiled water. This result is in line with research by

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A. Novitasari (2015) which shows that the level of asthma control can be assessed using the Asthma Control Test (ACT). This study is also consistent with the findings of Mutoharoh E. (2018) which states that the consumption of honey ginger can reduce shortness of breath, which means that there is a significant influence in improving the breathing patterns of asthma sufferers. Thus, it can be concluded that the administration of ginger and honey decoction water is effective in improving better breathing patterns in asthma patients.

Research Limitations

In this study, there are many things that have not been explored by the researcher or that make the research results not optimal. The limitations in this study include 1) the researcher did it himself during the intervention of giving ginger and honey boiled water, 2) the bias was not strictly controlled when intervening from each session, 3) the researcher's time was limited in controlling and observing all respondents before and after the intervention.

CONCLUSION

The combination of ginger and honey boiled water was shown to have a significant effect on the ineffectiveness of breathing patterns in asthma patients. Based on the results of the statistical test, there was a significant difference between the post-test intervention group and the control post-test group, with a higher average value of ineffectiveness of breathing patterns in the intervention group (Mean = 31.20; SD = 6.178) compared to the control group (Mean = 21.07; SD = 5,599). The results of the analysis showed that this difference was very significant (t = 4.707; p = 0.001), which indicated that the consumption of a combination of ginger and honey boiled water had a clear positive effect on the patient's condition. The administration of a combination of ginger and honey decoction water not only aims to improve control against asthma, but also as an education for patients to become therapists for themselves, with an emphasis on prevention. The results of this study support the previous findings by Mutoharoh E (2018), which showed that the administration of honey ginger drink can reduce shortness of breath, with a significant influence on ineffective breathing patterns. Therefore, it can be concluded that the administration of honey ginger drink is effective in reducing the ineffectiveness of breathing patterns, such as shortness of breath in asthma patients.

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