

Review Article: Systematic Review, Meta-Analysis, Integrative Review, Scoping Review

EFFECTIVENESS OF ASTHMA SELF-MANAGEMENT EDUCATION (ASME) ON IMPROVING THE QUALITY OF LIFE: A LITERATURE REVIEW

Novarika Aliya Rizky¹, Arista Maisyaroh^{1*}, Dwi Ohta Fibrianti¹, Syaifuddin Kurnianto¹, Eko Prasetya Widiyanto¹

¹Diploma in Nursing, Faculty of Nursing, Universitas Jember, Indonesia

***Correspondence:**

Arista Maisyaroh

Diploma in Nursing, Faculty of Nursing, Universitas Jember, Lumajang Campus Brigjen Katamso Road, Lumajang District, East Java Province, Indonesia, 67311.

Email: aristamaisyaroh@unej.ac.id

Article Info:

Received: March, 2nd, 2023

Revised: October, 18th, 2023

Accepted: October, 20th, 2023

DOI:

<https://doi.org/10.36720/nhjk.v12i2.476>

Abstract

Background: Asthma is a common chronic respiratory disease that affects around 300 million people of all ages worldwide so that it has an impact on patients both physically, activity restrictions, and psychosocially, in terms of quality of life.

Objective: This study aims to assess the effectiveness of Asthma Self Management Education (ASME) to improve the quality of life of people with asthma.

Design: The design of this study uses a literature review.

Data Sources: Initial searches of journal articles were performed on the Pubmed, Science Direct, and Google Scholar search databases from 2017-2021 with the keyword Asthma self management education. The ASME study found 807 articles but only 7 journal articles that met the search inclusion criteria.

Review Methods: A literature review procedures were used to collect library data, reading and taking notes, as well as critical assessment of managing research materials

Results: According to the results of the literature review, ASME has several variants with an average duration of ASME being carried out for 6 months to 15 months. Asthma control is measured to assess lung function and behavioral changes in individuals with asthma. The ASME technique is effective as an educational method in improving lung function, asthma control, quality of life, and behavior change which are important components of asthma sufferers.

Conclusion: The application of ASME technical interventions to asthma sufferers can be used as an educational program to improve behavior changes that can control asthma symptoms non-pharmacologically.

Keywords: *Asthma, Asthma Control, Asthma Self Management Education (ASME), Quality Of Life*

INTRODUCTION

Asthma is characterized by disease characteristics with variable airflow

obstruction, airway hyperresponsiveness and airway inflammation (Maisyaroh, 2017).

Asthma is a chronic respiratory condition that is encountered with episodes of physiological airway narrowing that causes symptoms of wheezing, shortness of breath, and mucus production. The trajectory of symptoms varies from mild, moderate to severe episodes that can be fatal. The effects of this chronic disease are known to have an impact on patients both physically, limiting activities, and psychosocially, in terms of quality of life (McTague, 2019).

One of the causes of asthma can occur in the agricultural environment. According to Widiyanto (2020) work in agriculture is one of the jobs that are at risk with accident and death rates. Farmers may experience a variety of chronic illnesses and diseases similar to the general population; however, there is evidence that they are at increased risk of acute occupational injuries, certain chronic illnesses and pesticide illnesses (Maisyaroh dkk., 2022).

According to the World Health Organization (WHO) in 2020, until now, the number of people with asthma worldwide is estimated at 300 million, and this number is expected to continue to increase to 400 million in 2025. Worldwide, asthma is one of the top 5 causes main cause of death with 17.4%. The disease has indeed increased over the past 20 years, with a projected 20% increase in mortality over the next 10 years. WHO estimates that 255,000 patients died from asthma in 2005 (Kweon, 2017). According to Restrepo Klinge (2019) the study was carried out at the Emergency Room at Klungkung Hospital which explained that 24 people (35.3%) had controlled asthma and 44 people (64.7%) had uncontrolled asthma. The quality of life of bronchial asthma sufferers showed that 41 people (60.3%) had quality of life problems and 27 people (39.7%) did not experience problems. Quality of life can be compromised by uncontrolled or poorly controlled asthma.

Asthma that is not handled properly can cause an increase in morbidity, and the symptoms will get worse and interfere with

quality of life, and can be fatal to death (Kurnianto dkk., 2022).

Self-management education can help young people overcome these barriers. Asthma Self Management Education (ASME) is a health education program created to help individual or community attitudes from unhealthy behavior to healthy behavior by using an educational process. In this context it is related to appropriate and rational treatment techniques that can control asthma symptoms and the quality of life of asthma sufferers (CDC, 2018).

Adolescent and adult populations have major adaptive needs in benefiting from educational support making it highly effective to take responsibility and turn to self-care (Buckner dkk., 2018).

Various ASME variants with an average ASME duration of 6 months to 15 months, so it is necessary to analyze the variants with the right duration to assess lung function and behavior changes in individuals with asthma.

This study aims to assess the effectiveness of Asthma Self Management Education (ASME) to improve the quality of life of people with asthma. The ASME technique is effective as an educational method in improving lung function, asthma control, quality of life, and behavior change which are important components of asthma sufferers. The application of ASME technical interventions to asthma sufferers can be used as an educational program to increase behavior change that can control asthma symptoms non-pharmacologically.

METHODS

Design

This research is a literature review, a comprehensive review of several research studies are determined based on the theme of effectiveness ASME on improving the quality of life of asthma sufferers.

Search Methods

Literature search in this literature review used the Pubmed, Science Direct and Google

Scholar databases with the keywords used when searching for "Asthma self management education AND asthma" or "Asthma self management education AND asthma". Literature searches based on the last five years (2017-2021) and articles that will be used in this literature review must meet the full text requirements. After that, the selected articles will be reviewed.

Table 1 Keywords Literature Review

Database	Keyword	Result
Pubmed	"Asthma Self Management Education" AND "Asthma"	434
Science Direct	"Asthma Self Management Education" AND "Asthma"	149
Google Scholar	"Self Management Education" AND "Asthma"	224
Total		807

Search Outcome

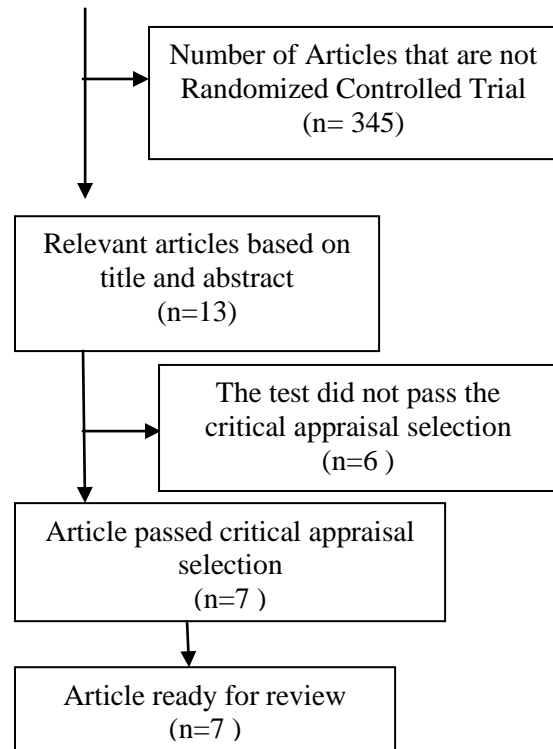
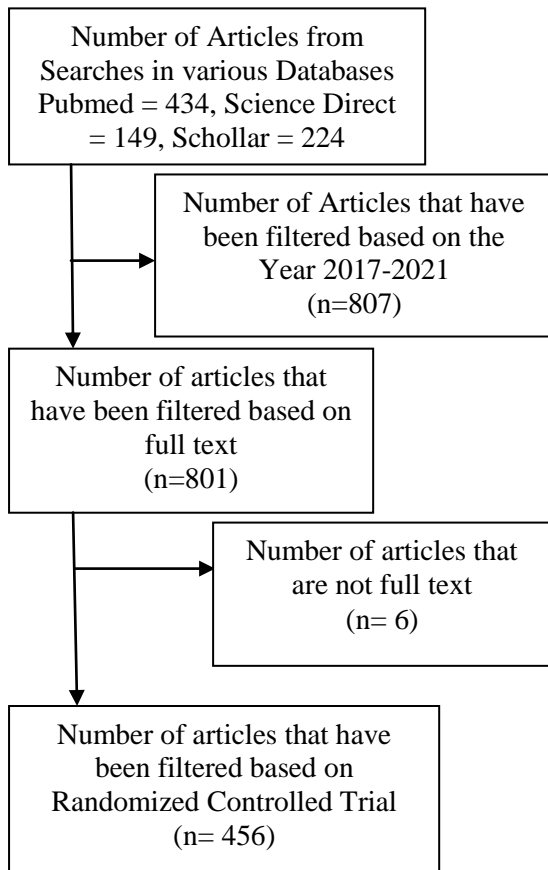


Figure 1. Flow chart

Quality Appraisal

The author carries out careful and precise evaluations by using an assessment of the quality of research studies that have been found using the Critical Appraisal Skills Program (CASP). Assessment considerations are given a value of yes, no, or unclear. Each score with the value "yes" is given one point and the others are given a score of zero, then each score is calculated and summed up. If the overall result is less than 50% then it does not pass the critical assessment test and more than 50% then it passes the critical assessment test. Journal quality reviewed are those that pass critical appraisal as many as 7 articles.

Inclusion And Exclusion Criteria

This selection was made based on eligibility according to the inclusion and exclusion criteria.

Table 2 PICOS Format in Literature Review

Criteria	Inclusion	Exclusion
Population	Asthma sufferers range from adolescents to adults	Children and family

Intervention	Asthma Self Management Education	Non Asthma Self Management Education
Comparators	-	-
Outcomes	There is effectiveness of asthma self-management education to improve the quality of life of people with asthma	There is no effectiveness of asthma self management education to improve the quality of life of asthma sufferers
Study Design	Randomized controlled trial	Case control studies, cohort studies, quasi experimental studies
Publication Years	2017-2021	Pre-2017
Language	Indonesian and English	Language other than English and Indonesian
Text Availability	Full text	Not full text

RESULT

Ten studies analyzed in the review. This library uses different interventions (Table 3).

Improved Quality of Life

Quality of life according to the World Health Organization Quality of Life (WHOQOL) is an individual's perception of their place in the cultural context and related to set goals, expectations, and standards. It also affects physical health, mental state, level of independence, social relationships, beliefs, and relationships with the environment (Mutianisa, 2017). Quality of life is often used as a benchmark in chronic disease conditions (Luthfa dan Fadhillah, 2019). Based on the research of Rhee dkk. (2020) explained that Quality Of Life (QOL) increased significantly from the start of the

training to post-training and was further improved from time to time. Apter dkk. (2019) stated that the AQLQ is rated on a scale of 1 to 7 points, with a higher score indicating a better quality of life related to asthma.

ASME effectiveness

Statistical test results from 7 articles obtained a p value = <0.05 which means significant and 1 article was not significant because it did not conclude the results of the p value but the results affected the improvement of asthma control.

According to Rhee dkk. (2020) demonstrated long-term positive effects of peer-led asthma management programs on various asthma outcomes, including quality of life, asthma control, knowledge and attitudes related to asthma in adolescent peer leaders. Rhee dkk. (2021) said peer-led asthma self-management education was more effective than adult-led programs in improving asthma outcomes, with continuous improvement for up to 15 months with a statistical test result of P=0.001. Meanwhile, according to Liao dkk. (2019) said there is evidence to support the effectiveness of goal setting interventions in improving asthma control, quality of life and self-efficacy in adult asthma patients.

CONCLUSION

Most of the identification results for the implementation of ASME use a combination of ASME and PLASMA with the required duration of 6-15 months. While the improvement in the quality of life of asthma patients showed an overall increase, where a scale of 1 to 7 points, with a larger score indicating a better quality of life related to asthma. Assessment of quality of life using the AQLQ measurement tool. From the conclusions above, the application of ASME interventions for asthma sufferers can make educational programs to improve behavior changes that can control asthma symptoms and quality of life non-pharmacologically.

Table 3 Synthesis of Result

Writing, Year	Title	Population / Sample	Outcome	Intervention	Methods
Farag, et al. 2018.	Asthma action plan for bronchial asthma self-management proactiveness in adults: a test randomized controlled trial.	320 asthma patients chronic.	Randomized controlled trials	AAP	<ul style="list-style-type: none"> a. The measuring instrument used by ACT is 6 month b. The value of $p < 0.0001$ indicates effective in improve asthma control
Kohler, et. al. 2020.	Self-Management Program Internet-Based Asthma Increase Knowledge About Asthma.	82 participants	Randomized controlled trials	AE	<ul style="list-style-type: none"> a. The measuring tool used by ACT is with a duration of 12 month b. The value of $p < 0.001$ indicates effective in improve asthma control
Rhee, et al. 2019.	Fidelity of management interventions peer-led asthma self and deep attention control youth multi-site study urban.	Old teenager 12-17 years (N = 259).	Randomized controlled trials	PLASMA	<ul style="list-style-type: none"> a. The measuring instrument used is ACQ with a duration of 12 month b. The value of $p < 0.001$ indicates effective in improve asthma control
Buckner, et. al. 2018.	Education programs Asthma Independent Management Interprofessional Based School for School Students Intermediate: Eligibility Trial	Student medium with asthma diagnosis (N=18).	Randomized Controlled trials	ASME	<ul style="list-style-type: none"> a. Measuring tools used are ACT and PAQLQ b. There is a significant increase in quality of life from 18.45 to 45.82 c. The value of $p < 0.000$ indicates effective in improve asthma control and quality of life
Rhee, et al.	Long Term Effectiveness of	Old teenager	Randomized controlled	ASME	<ul style="list-style-type: none"> a. The measuring tool used is PAQLQ

2021.	Asthma Self Management Program Peer-led against Outcomes of Asthma in Adolescents Living in an Urban Area.	12 to 17 year with persistent asthma (N=320).	trials		with duration 15 months b. There is a quality of life that is better than 0.38 to 0.63 c. The value of p <0.001 indicates effective in improve the quality of life of asthma
Apter, et al. 2019.	Home visits for asthma uncontrolled in between income adults low with portal access patient.	Three hundred and one adults with asthma who does not controlled	Randomized Controlled trials	ASME	a. Measuring tools used are ACQ and AQLQ with a duration of 12 months b. Quality of life increased at the start of training 2,4 to 3.6 after training c. The value of p <0.05 indicates that it is effective in improve asthma control and quality of life
Rhee, et al. 2020.	Long term effects of asthma self-management program led by colleagues peers on asthma outcomes on adolescent peer leaders.	51 youth (16-20 years) the registered in program management asthma independent.	Randomized controlled trials	PLASMA	a. Measuring tools used using ACQ and AQLQ with a duration of 15 months b. QOL increased from baseline to 16.5 post training 24.5 and more improved from time to time. c. The value of p <0.001 indicates effective in improve the quality of life of asthma.

Table 4 Statistical Test Results

No	Journal articles	Statistical Test Results	Description
1.	(H. Farag et al., 2018)	P = 0,0001	significant
2.	(Apter et al., 2019)	P = 0,05	significant
3.	(B. Kohler et al., 2020)	P = 0,001	significant
4.	(Buckner et al., 2018)	P = 0,000	significant
5.	(Rhee et al., 2019)	P = 0,001	significant
6.	(Rhee et al., 2020)	P = 0,001	significant
7.	(Rhee et al., 2021)	P = 0,001	significant

ACKNOWLEDGMENT

The author thanks the Faculty Jember University of Nursing.

DECLARATION OF CONFLICTING INTEREST

The authors stated that they did not competing interests in producing this manuscript.

FUNDING

The author received no financial support in manuscript research.

AUTHOR CONTRIBUTION

Novarika Aliya Rizky: Main authors, conceptualization, methodology, analysis, resources.

Arista Maisyaroh: Conceptualization, methodology, formal analysis, resources, data curation.

Dwi Ochta Fibrianti: Validation, formal analysis, data curation,.

Syaifuddin Kurnianto: review writing and editing.

Eko Prasetya Widiyanto: review writing and editing.

ORCID

Novarika Aliya Rizky: None

Arista Maisyaroh: [0000-0001-7849-1186](https://orcid.org/0000-0001-7849-1186)

Dwi Ochta Fibrianti: [0000-0003-1528-9006](https://orcid.org/0000-0003-1528-9006)

Syaifuddin Kurnianto:[0000-0001-7060-9389](https://orcid.org/0000-0001-7060-9389)

Eko Prasetya Widiyanto:

[0000-0002-4749-3776](https://orcid.org/0000-0002-4749-3776)

REFERENCES

- Apter, A. J., A. R. Localio, K. H. Morales, X. Han, L. Perez, A. N. Mullen, M. Rogers, H. Klusaritz, J. T. Howell, M. N. Canales, dan T. Bryant-Stephens. 2019. Home visits for uncontrolled asthma among low-income adults with patient portal access. *Journal of Allergy and Clinical Immunology*. 144(3):846-853.e11.
- Buckner, E. B., D. J. Copeland, K. S. Miller, dan T. Op’T Holt. 2018. School-based interprofessional asthma self-management education program for middle school students: a feasibility trial. *Progress in Community Health Partnerships: Research, Education, and Action*. 12(Special Issue):45–59.
- CDC. 2018. Edukasi manajemen diri asma aprestasi ltinta manajemen medis berbasis pedoman
- Kurnianto, S., A. Astuti, R. E. Sulistyono, dan M. C. Putri. 2022. Changes in respiratory function in asthma patients using respiratory inspiration muscle exercise : literature review. *Nursing Health Sciences Journal*. 2(2):179–182.
- Kweon, J. Y. 2017. Pengaruh edukasi tentang rencana tindakan menurut pemantauan diri terhadap kepatuhan manajemen diri , pengetahuan , kontrol gejala , dan

- kualitas hidup di antara pasien asma dewasa: uji coba terkendali acak penggunaannya [10]. saya rasa perlu sesuatu. 47(5):613–623.
- Liao, Y., G. Gao, dan Y. Peng. 2019. The effect of goal setting in asthma self-management education: a systematic review. *International Journal of Nursing Sciences*. 6(3):334–342.
- Luthfa, I. dan N. Fadhillah. 2019. Self management menentukan kualitas hidup pasien diabetes mellitus. *Jurnal Endurance*. 4(2):402.
- Maisyaroh, A. 2017. Buku ajar agronursing. *Digital Repository Universitas Jember Buku Ajar*. 9:56–62.
- Maisyaroh, A., E. P. Widiyanto, dan R. D. Fibriansari. 2022. Determinants of injury in agricultural area. *Nurse and Health: Jurnal Keperawatan*. 11(1):22–33.
- McTague, K. 2019. Pemuda dengan asma dan pengalaman pendidikan manajemen diri mereka: protokol tinjauan sistematis kualitatif. 675–681.
- Mutianisa, H. 2017. HUBUNGAN efikasi diri dan kualitas hidup pada pasien asma
- Rhee, H., T. Love, D. Harrington, L. Walters, J. Mammen, dan E. Sloand. 2020. Long-term effects of a peer-led asthma self-management program on asthma outcomes in adolescent peer leaders. *Patient Education and Counseling*. 104(6):1415–1422.
- Rhee, H., T. Love, M. N. Wicks, L. Tumiel-Berhalter, E. Sloand, D. Harrington, dan L. Walters. 2021. Long-term effectiveness of a peer-led asthma self-management program on asthma outcomes in adolescents living in urban areas: a randomized clinical trial. *JAMA Network Open*. 4(12):1–15.
- Widiyanto, E. P., S. Suhari, R. D. Fibriansari, dan A. Maisyaroh. 2020. Analysis of farmers' internal factors with the ability to know hazardous materials. *Nurse and Health: Jurnal Keperawatan*. 9(1):32–41.

Cite this article as: Rizky, N.A., et.al. (2023). Effectiveness of Asthma Self-Management Education (Asme) on Improving the Quality of Life: A Literature Review. *Nurse and Health: Jurnal Keperawatan*, 12 (2), 164-171. <https://doi.org/10.36720/nhjk.v12i2.476>