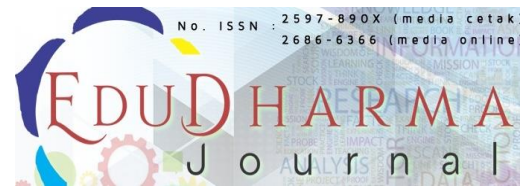


Available online: <http://openjournal.wdh.ac.id/index.php/edudharma>

Edu Dharma Journal: Jurnal Penelitian dan Pengabdian Masyarakat

ISSN (Print) 2597-890 X , ISSN (Online) 2686-6366




A STUDY OF ASTHMA AWARENESS IN THE OCCUPATIONAL SETTING OF MANGUHARJO LUNG HOSPITAL, MADIUN CITY, EAST JAVA PROVINCE

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ARTICLE INFORMATION	A B S T R A C T
<p>*Corresponding Author Name : Isnin Anang Marhana E-mail: isnin.anang@fk.unair.ac.id</p>	<p><i>Asthma presents a global health challenge with high morbidity and potential mortality. Data from Manguharjo Lung Hospital in Madiun (2020-2022) show a consistent rise in asthma cases and related visits. Although asthma is incurable, its management aims to control and reduce attack frequency. Varied understandings of asthma complicate patient management and control. This community service study aims to enhance asthma knowledge and control among patients at Manguharjo Lung Hospital. Educational and health promotion methods were employed, assessed via pre- and post-test questionnaires. Results indicate a significant knowledge increase, with post-test scores substantially higher than pre-test scores. Initially, only 30% of participants scored high on the pre-test; this figure rose to 90% post-education. This study demonstrates that the asthma awareness program significantly improved patient knowledge. This psychosocial approach is expected to enable asthma patients to become health advocates within their community.</i></p>
<p>Keywords: Asthma_1 Community service_2 Education_3 Hospital_4 Madiun_5</p>	
<p>Kata Kunci: Asma_1 Pengabdian masyarakat_2 Pendidikan_3 Rumah sakit_4 Madiun_5</p>	<p>A B S T R A K</p> <p>Asma merupakan tantangan kesehatan global dengan tingkat morbiditas yang tinggi dan potensi mortalitas. Data dari Rumah Sakit Paru Manguharjo di Madiun (2020-2022) menunjukkan peningkatan kasus asma dan kunjungan terkait setiap tahun. Meskipun asma tidak dapat disembuhkan, pengelolaannya bertujuan untuk mengendalikan dan mengurangi frekuensi serangan. Pemahaman yang beragam tentang asma mempersulit pengelolaan dan pengendalian pasien. Studi pengabdian masyarakat ini bertujuan untuk meningkatkan pengetahuan dan pengendalian asma di kalangan pasien di Rumah Sakit Paru Manguharjo. Metode edukasi dan promosi kesehatan digunakan, dengan penilaian melalui kuesioner pra-tes dan pasca-tes. Hasil menunjukkan peningkatan pengetahuan yang signifikan, dengan skor pasca-tes jauh lebih tinggi dibandingkan skor pra-tes. Awalnya, hanya 30% peserta yang mendapatkan skor tinggi pada</p>

	<p>pra-tes; angka ini meningkat menjadi 90% setelah edukasi. Studi ini menunjukkan bahwa program kesadaran asma secara signifikan meningkatkan pengetahuan pasien. Pendekatan psikososial ini diharapkan dapat memungkinkan pasien asma menjadi penggerak kesehatan dalam komunitas mereka.</p>
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INTRODUCTION

Asthma is one of the non-communicable diseases that has become a global issue today. It can affect both children and adults, with a high morbidity rate and the potential to cause mortality in severe cases (Trivedi & Denton, 2019). According to the World Health Organization (WHO), the current global number of asthma sufferers is approximately 300 million. It is estimated that by the year 2025, this number will increase to 400 million (Kementerian Kesehatan RI, 2015). Based on the results of the Household Health Survey, asthma is the fourth leading cause of mortality in Indonesia, accounting for 5.6% (Kementrian Kesehatan Republik Indonesia, 2019). Asthma is a significant chronic respiratory disease and a serious public health concern in various countries worldwide. While asthma can be mild and not interfere with daily activities, it can also become persistent, disrupting activities and daily routines, leading to decreased productivity due to absenteeism from work or school. Additionally, it can result in disability, further contributing to reduced productivity and diminished quality of life (Dean et al., 2009).

In Indonesia, there are 19 provinces with asthma prevalence exceeding the national average, and one of them is East Java

(Badan Pusat Statistik Kota Madiun, 2015). The province of East Java also recorded the highest number of Inpatient Asthma Cases in 2017. The prevalence of asthma is generally higher in urban areas compared to rural areas, as the lifestyle in large cities increases the risk of asthma occurrence (Ratih Oemarti et al., 2010). Based on data from the Central Statistics Agency of Madiun Regency, it is known that asthma ranked among the top 10 most prevalent diseases in Madiun Regency in 2015, with a total of 6594 cases (Badan Pusat Statistik Kota Madiun, 2015). According to asthma data from Mangunharjo Lung Hospital in the city of Madiun from 2020 to 2022 (Figure 1), there has been a significant increase in the total number of new asthma cases and asthma-related visits each year. The peak was observed in 2022 with a total of 688 new cases and 2880 asthma-related visits (Rumah Sakit Paru Mangunharjo, 2022).

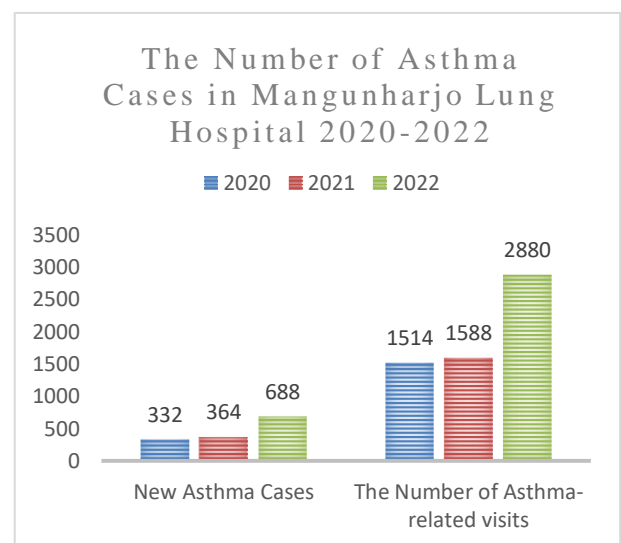


Figure 1. The Number of Asthma Cases in Manguharjo Lung Hospital 2020-2022

One of the triggers for asthma recurrence is a new environment that is less supportive for individuals, such as adverse weather conditions, colder air, dust, increased humidity, and crowded places filled with people, making it easier for asthma to recur. This situation is exacerbated by the limited understanding and knowledge of asthma patients regarding their condition. Social factors like these further strengthen the general public's lack of understanding about asthma, making it challenging to control the disease in that area.

The lack of knowledge and understanding among asthma patients about their condition, including symptoms, risks, and asthma management, contributes to the rising incidence of asthma (Elliott et al., 2014; Evers et al., 2013; Jadhav & Antony, 2018; Rumah Sakit Paru Mangunharjo, 2022; Shefer et al., 2014). This, in turn, leads to decreased productivity, an increase in emergency cases at hospitals, and increased mortality and morbidity due to asthma in the working environment of Manguharjo Lung Hospital in the city of Madiun. Overall, this situation has a significant impact on the well-being of the community.

Therefore, it is necessary to conduct comprehensive community service activities organized by experts in the field to address the issues in the community. These activities will include educational and health promotion efforts on asthma and its management, as well as interventions such as asthma exercises, so that asthma patients can become health cadres within the community, thus increase knowledge, understanding, and concern among asthma sufferers. This, in turn, is expected to lead to an increase in asthma management and control rates in the working environment of Manguharjo Hospital in Madiun.

MATERIAL AND METHOD

This study was carried out on December 6, 2023, in the working area of Manguharjo Lung Hospital, East Java Province, Madiun City, using a cross-sectional method. The tool used to collect data was a questionnaire (pre-test and post-test), with a population consisting of asthma patients at Manguharjo Lung Hospital in East Java Province, Madiun City. Sample collection was carried out through purposive sampling and we found 30 asthma patients as participants who met eligibility criteria (more than 17 years old, has an Indonesian identity card, resides and works in Madiun). Primary data were obtained using pre-test and

post-test questionnaires, and the analysis was conducted descriptively. A scientific discussion was held to generate recommendations related to strategic issues, particularly in efforts to prevent asthma recurrence. As supporting material for the improvement of health cadres' knowledge, the Asthma and COPD (Chronic Obstructive Pulmonary Disease) module was utilized. There are several steps in this community service study including preparation, implementation, and evaluation.

Preparation

The preparation stage involves obtaining permits, coordinating meetings, and conducting field surveys to determine the location. This community service activity and study was carried out on Wednesday, November 15, 2023, at Manguharjo Lung Hospital in East Java Province, Madiun City. Additionally, handouts/Module Books for Asthma Cadres in Madiun were created and printed to be distributed on the day of the community service activity and study.

Implementation

The community service activity and study at Manguharjo Lung Hospital was conducted on Wednesday, December 6, 2023, from 08:00 to 12:00 WIB. In this

stage, the following activities were carried out:

1. Assessing the participants' knowledge level through a pre-test consisting of 15 questions covering all asthma-related topics.
2. Presentation of educational materials:
 - a) Material 1 on "What is Asthma?" for 30 minutes with the speaker Dr. Alfian Nur Rosyid, SpP(K).
 - b) Material 2 on "Asthma: How the Environment Affects" for 30 minutes with the speaker Dr. Garinda Alma Duta, SpP(K).
 - c) Material 3 on "Keeping Asthma from Recurring Easily" for 30 minutes with the speaker Dr. Yuyus Dwi Prasetyo, SpP(K).
3. Evaluation of participants through a post-test consisting of 15 questions covering all the provided materials.
4. Distribution of printed handouts/Module Books for Asthma Cadres.
5. Formation of educational cadres to monitor the health conditions of residents around who have a history of symptoms of asthma.

Evaluation

To evaluate the knowledge of extension health cadres after receiving counseling, the pretest and post-test being assessed by divided them into two categories, namely

high with a value of more than 80 (>80) and low with a value of less than equal to 80 (≤ 80), then the results were compared to see the improvement of knowledge about asthma and its management.

RESULT

The provision of education and health promotion on the symptoms of asthma, asthma management and its preventive measures is aimed to increase the knowledge and asthma control levels in the working environment of Manguharjo Lung Hospital in Madiun. This is considered a psychosocial approach, with the expectation that asthma patients in the workplace of Manguharjo Lung Hospital can become health cadres for the community. This community service activity and study was conducted on December 6, 2023, and was attended by 30 participants (Figure 2). The characteristics of participants in this study include gender, age, education, and employment status. The study findings can be observed in Table 1.

Table 1 indicates that the majority of participants, totaling 18 individuals (60%), are females. Based on previous research, females are known to play a significant role in healthcare, being more meticulous and patient when responding

to questionnaires compared to males. Additionally, females tend to be more interactive and active in social settings than males within the community (Puspasari et al., 2018). This suggests that collaborative or interactive learning approaches, such as health education and promotion, are more effective in enhancing knowledge absorption among female health cadres in specific topics compared to their male counterparts. Furthermore, data sources state that females more frequently utilize the internet to obtain health-related information compared to males (Soemartono, 2018).



Figure 2. Research and Community Service Activity at Manguharjo Lung Hospital

Based on the Table 1, 70% of the participants fall within the age range of 45-65 years. Age influences one's mindset and cognitive abilities; as a person ages, their mindset and cognitive abilities tend to develop further. Consequently, knowledge acquired tends to increase as well (Budiman, 2018).

Table 1. Description of the Participants' Characteristics

Characteristic	f	%
Gender		
Female	18	60
Male	12	40
Age		
<45 years	4	13.3
45-65 years	21	70
>65 year	5	16.7
Education		
Elementary School	3	10
Junior School	6	20
High School	21	70
Diploma/ Bachelor	0	0
Occupation		
Unemployed	25	83.3
Employed	5	16.7

In terms of education level of participant based on Table 1, it is shown that 70% of the participants (21 individuals) have a high school background, 20% of the participants (6 individuals) have completed junior high school, 10% (3 participants) are diploma/undergraduate degree holders, and 5.6% (2 individuals) graduated from elementary school. Research conducted by Utami et al. states that respondents with higher education exhibit good knowledge regarding disease prevention. However, individuals with lower education levels may not necessarily have insufficient knowledge. This may be due to the ease of information access in line with technological advancements (Utami et al., 2020). Higher education often involves the development of analytical skills and critical thinking. Health cadres with

higher education levels may be better equipped to evaluate information, understand its implications, and apply knowledge in practical contexts.

The employment status of the participants from Table 1 indicates that 25 individuals (83,3%) are employed, while only 5 individuals (16.7%) are unemployed. An individual's occupation significantly influences their access to information related to a particular subject. The work environment can serve as a source of experience and knowledge for an individual, both directly and indirectly (Mubarak & Chayatin, 2019). A study conducted in Uganda states that individuals working in healthcare have six times better knowledge about COVID-19. Conversely, individuals employed as drivers, entrepreneurs, and security

personnel have lower levels of knowledge (Ssebuufu et al., 2020).

The results of the pre-test and post-test conducted in this activity indicate an improvement in knowledge scores before and after the educational intervention. The study findings presented in Table 2 reveal that the majority of participants, 21 individuals (70%), had low pre-test scores, with only 9 individuals (30%) scoring in the high category before the education session. However, the post-test

analysis showed an increase in knowledge among participants after the education session where the majority of participants, 27 individuals (90%), achieved high scores, while 3 individuals (10%) obtained low scores. The change in participants' knowledge before and after the education session is clearly evident. Participants gained understanding of asthma and its management, and it is expected that they can implement this knowledge as a preventive measure against asthma recurrence.

Table 2. Pre- and Post-test Questionnaire Results

Variable	Pre Test		Post Test	
	High Score	Low Score	High Score	Low Score
Knowledge about asthma and its management	30% (9 people)	70% (21 people)	90% (27 people)	10% (3 people)

DISCUSSION

A good level of asthma control can be achieved through asthma education provided by healthcare professionals to patients, collaborative efforts in managing asthma triggers, and the appropriate administration of pharmacotherapy. Asthma control is considered to be achieved when there is a decrease in the frequency of attacks, a reduction in inflammation in the airways, no limitations in the patient's physical activities, and normal lung function. As a result, individuals can be free from asthma disturbances, their daily activities

remain uninterrupted, they do not experience nighttime breathlessness while sleeping, they do not require reliever medications, and the results of lung function tests are normal (Nguyen et al., 2018; Price et al., 2014).

There are two journals discussing the relationship between asthma education and asthma control levels. The results show a significant correlation between education level and asthma control after the training session (Kavut & Kalpaklioğlu, 2010). Research by Rashmi Mishra et al. supports these findings,

indicating that educational interventions have a positive impact on asthma control levels and reduce emergency hospital visits (Mishra et al., 2017). Knowledge about asthma is crucial in achieving asthma control. Patients, being aware, can consciously avoid recurring triggering factors, use medications correctly, and consult with doctors appropriately.

The asthma module provided to community service participants at Manguharjo Lung Hospital has brought significant benefits in improving participants' knowledge, especially those who are asthma patients. According to research published in the *Journal of Respiratory Medicine* (e.g., Smith et al., 2018), asthma education modules have proven effective in enhancing participants' understanding of asthma triggers, symptom management, and the importance of consistent care. The study highlights that participants who underwent the module showed a significant increase in asthma knowledge compared to the control group (Mammen et al., 2018). Another study using questionnaires and educational materials such as the booklet "Asthma: The Role of Teachers in Asthma Management at School" also found that there was an improvement of nearly 30% in teachers answering correctly regarding asthma

causes after receiving the booklet and around 20% for questions about symptoms and asthma care. This study concludes that educational materials like the booklet "Asthma: The Role of Teachers in Asthma Management at School" have an impact on increasing teachers' knowledge about asthma and its treatment.

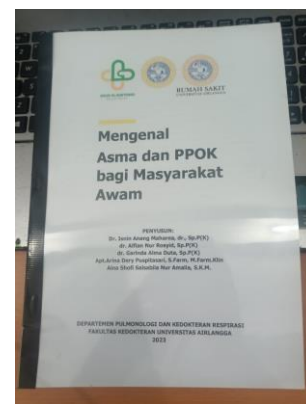


Figure 3. Asthma and COPD Module

The asthma module not only benefits individual knowledge but also contributes to reducing the burden on medical facilities. By empowering community service participants to identify early symptoms and manage asthma more effectively, as well as enhancing patients' self-care abilities, the existence of this module encourages an increase in participant knowledge. This, in turn, can minimize emergency visits to healthcare facilities, such as Manguharjo Lung Hospital, while optimizing healthcare resources and improving efficiency in community health services.

CONCLUSION

The study in the working environment of Manguharjo Lung Hospital East Java Province in Madiun has proceeded smoothly and achieved its objectives according to the targeted outcomes. Based on the results obtained, it can be concluded that providing education on asthma and its management increase the knowledge of patients, as evidenced by a significant difference in questionnaire scores (pre-test and post-test) before and after the education session. The provision of education and health promotion on asthma and its management is crucial for asthma patients to have a better understanding of how to handle their condition. When patients are clear about what triggers their disease, they can avoid those triggers, potentially preventing asthma attacks. If they cannot avoid triggers, they know the preventive measures to take. The knowledge that asthma patients have about the recognition, signs and symptoms of asthma, asthma management, and asthma prevention is one of the psychosocial approaches. It is expected that asthma patients in the working environment of Manguharjo Lung Hospital in Madiun can become health cadre within the community. Advice for future researcher is that Asthma education programs should be designed by incorporating cultural,

social, and local factors, including patient values and beliefs. This approach can boost program acceptability, motivation, activation, and overall benefits.

ACKNOWLEDGMENT

The authors would like to thank the Faculty of Medicine, Universitas Airlangga, Surabaya, for the opportunity to conduct this study.

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