

Research Article

The Relations of Knowledge, Attitudes, and Precautions with Asthma Control Levels in Patients With Asthma

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Received: 15.04.20, Revised: 20.05.20, Accepted: 25.06.20

ABSTRACT

Asthma is a global health problem which affects all age groups of people, in the last ten years, there has been an increase of 1% of asthma patients in Indonesia to 4.5% of the total Indonesian population with most of the uncontrolled asthma level. Knowledge, attitudes, and actions are crucial factors in controlling asthma recurrence. This study aimed to know the relationship of knowledge, attitudes, and asthma precautions with the level of asthma control with an independent variable of knowledge about asthma and asthma precautions. The study used a correlational descriptive research design with a cross-sectional approach. The population of this study was asthma outpatients, with 63 respondents using purposive sampling. The dependent variable was the asthma control level. The data were collected using an asthma general knowledge questionnaire, asthma prevention attitudes questionnaire, asthma precautions questionnaire, and asthma control test questionnaire. The data were then analyzed using a Spearman Rho test with a significance level of <0.05 . The correlation between knowledge and asthma control level was $p=0.001$, attitudes and asthma control level was $p=0.000$, precautions and asthma control level was $p=0.000$. Healthcare professionals need to educate asthma patients in enhancing the knowledge, attitudes, and precautions of asthma so that asthma patients know how to take proper action in controlling asthma recurrence.

Keywords: asthma control level, attitudes, knowledge, precautions

INTRODUCTION

Asthma is a serious global health problem that affects all age groups of people. The prevalence is increasing in many countries, especially among children (Lumbanraja, 2017). Asthma still becomes a burden in the healthcare system and society due to someone who suffers from asthma will experience the impact of asthma recurrences such as the loss of productivity at work, or school especially for children, and the cause of family problems (Bateman et al., 2008; A. S. Wahyuni, Hamid, Syafiuddin, Bachtiar, & Nerdy, 2018).

Asthma recurrence can occur due to a person's sensitivity to extrinsic allergens or intrinsic allergens that will result in the emergence of recurrent asthma symptoms (Kowalak, Welsh, & Mayer, 2011). Preliminary research on the level of asthma control in Immunological Allergy Clinics The Department of Internal Disease RSUPN Dr. Cipto Mangunkusumo Jakarta shows 64% uncontrolled cases, 28% well-controlled cases, and 8% half-controlled cases (Katerine, Medison, & Rustam, 2014; Surachmanto, Hatta, Islam, & Wahid, 2018).

The impact of asthma recurrence stated that from 3,207 case studies, 44-51% had night cough in the previous month, 28.3% of sufferers admitted disturbed sleep at least once a week (Busse & Rosenwasser, 2003). Sufferers who claim to have disabilities in recreation or sport 52.7%, social activity 44.1%, career selection 37.9%, household chores 32.6%, absence from school or employment in the last 12 months is experienced by 36.5% of children and 26.5% of adults. Asthma cases have always increased so that there should be good asthma prevention efforts. One of the importance of asthma prevention is that the patient could figure the reason for the asthma recurrence so that the patient will avoid things that could make asthma occurs. This will result in the patient to rarely go to healthcare for treatments (Nursalam, Hidayati, & Sari, 2017; Syamsu, Yusuf, Budu, & Patellongi, 2007). The results of knowledge research about asthma in the community are low (33%), moderate (39%), and well (28%), while the asthma recurrence in categories of infrequent (16%), seldom (37%) and often (47%). This indicates that the high number of repeated asthma recurrence is related to

the knowledge of asthma patients themselves (Hidayati, Irdawati, & Wulanningrum, 2015).

The data from the World Health Organization (2010) shows that about 300 million people all over the world suffer from asthma. The number is predicted to increase to around 100 million people who suffer from asthma in 2025. Besides that, the number of people who have reportedly died from asthma is around 250.000 people all over the world that happened in a country with a low-quality healthcare system. The data from Indonesian Health Ministry in 2013 shows that The huge number of asthma nationally is around 4.5 % from the total number of Indonesians, which means there is a 1% increase compared to 2007, which only around 3.5% (Kemenkes RI, 2013).

Factors that can cause repeated asthma attacks are often referred to as the trigger factor. The trigger factors can be allergens, respiratory tract infections, mental stress, intense exercise, or heavy physical activity, medicines, air pollution, and the working environment (Muttaqin, 2009). Recurrence in asthma is the return of bronchial asthma symptoms that are severe and disruptive to daily activities and require unscheduled hospitalization and outpatient (Boyd, 2008). According to the Lawrence Green concept, The health of a person or community is influenced by two fundamental factors, namely behavior causes, and non-behavior causes. The behavior causes consist of predispositions (knowledge, attitudes, belief), Supporting factors (Healthcare facility), and Driving factor (Healthcare staff's attitudes and behaviors). This level of knowledge will eventually shape one's attitude (Notoatmodjo, 2012). Attitude has not been an action or activity, but it is still a predisposing of the action of behavior. A person's attitude affects health behavior, a person's positive attitude will result in positive health behaviors, but a stance has not been automatically manifested in action (overt behavior). To realize the attitude of being a real deed required supporting factors or possible conditions such as facilities and supports from others. Practice or actions consists of implementing, conducting, and practicing what is known (Knowledge) and what is addressed (Well-valued) (Notoatmodjo, 2012).

In this concept, one that affects the health of a person is the person's knowledge and attitude. Knowledge is certainly an important role because by having a good knowledge of asthma, patients

can decide what attitudes can be done to overcome their health problems and they can take action in trying to prevent asthma recurrence. The level of asthma control can be achieved by medicament treatment and self-management as a good asthma patient, where one of the factors that can affect the asthma control level is the knowledge of asthma. Patients can recognize and conduct the self-management of asthma well. The knowledge of asthma is crucial in achieving asthma control. Patients who understand asthma properly consciously will avoid the trigger factors, use the medications properly, and consult to the doctor appropriately. In addition to motivating the patient, the success of the treatment is also determined by the proper administration of the medication and also followed by the knowledge about asthma and its management (Katerine et al., 2014). Other description in terms of educating the patients includes knowledge of asthma pathogenesis, how to recognize asthma triggers and recognize signs of early symptom severity, how to use the right medication and how to monitor the function of the lungs (Ikawati, 2010).

Based on the explanation above, the level of knowledge, attitudes, and actions in avoiding the trigger factors is one of the factors that often suppress asthma control levels. Therefore, the researcher wants to examine knowledge relations, attitudes, and precautions of asthma with asthma control levels on asthma patients.

MATERIALS AND METHODS

This research analyzed the relationship of knowledge, attitudes, and precautions of asthma with asthma control levels in the patient who suffer from asthma. This research used a cross-sectional design. The population that taken in this study is asthma patients, which consists of 63 respondents. The sampling technique used in this study was nonprobability sampling with purposive sampling. Samples consist of accessible population recruited using inclusion and exclusion criteria, resulted in 63 respondents. The Independent variable in this study was the asthma control level. The dependent variables in this study were knowledge, attitudes, and asthma precautions. The analysis data used spearman rho with 0,05 level of significance.

RESULT AND DISCUSSION

The relations between knowledge and asthma control level

Table 1. The relations between knowledge and asthma control level of asthma treatment

Knowledge	Asthma Control Level					
	Fully-controlled		Well-controlled		Uncontrolled	
Well	0	0%	2	50%	2	50%
Moderate	0	0%	23	63,9%	13	36,1%
Low	0	0%	3	13%	20	87%
Total	0	0%	28	44,4%	35	55,6%

Respondents who had a good knowledge with the asthma control level of both well-controlled and uncontrolled consist of 2 people (50%), while the respondents who had low knowledge with asthma control level partially controlled consist of 3 people (13%). The result showed that there was a relation between the level of knowledge and the level of asthma control in asthma patients, which means that the better the level of asthma knowledge of individuals, asthma recurrence will be more controlled. This result is supported by Katerine et al. found that the different proportions of uncontrolled asthma that has low and well knowledge indicate that there was a relation between asthma knowledge level with asthma control level, well asthma knowledge will help patients to prevent the recurrence (Katerine et al., 2014). The better understanding of asthma that a patient has, the more that person will know how to behave in the condition and the recurrence of asthma so it can be minimized. Those who suffered from asthma are individuals who have the potential to experience asthma attacks should have a good knowledge of the disease to recognize the signs that indicate the occurrence of the actual illness, which can be prevented when discovered early.

The value of knowledge in this study is largely considered in an insufficient category if it was associated with statistical action with the result of obtaining a significant relationship. Hadibroto & Alam in 2006 stated that if the knowledge of asthma is one of the things that can be done to avoid recurrence, having good knowledge will result in an effort in avoiding the trigger factor by implementing a healthy life, keeping environmental hygiene, and avoiding the factors that can cause asthma attacks (Hadibroto & Alam, 2006). Good knowledge of asthma will give a better ability to control asthma with the knowledge of factors that can cause the recurrence by avoiding them (Atmoko, Faisal, Bobian, Adisworo, & Yunus, 2011). Yunus in 2005 stated that the knowledge

level affects the asthma control level (Yunus, 2005). The knowledge about asthma has a meaningful relationship with an individual's attitude towards the factors which can cause asthma recurrence (Gu & Hongranagon, 2012).

Knowledge domains that are nearly half answered in either category by respondents are signs and symptoms domain. This domain contains questions or statements about the signs and symptoms of asthma recurrence. The other domain in a row is a knowledge of the treatment and prevention that nearly half of which answered in the sufficient category, This goes in contrast with the research conducted by Allen & Jones in 1998, the most questions which answered correctly is about treatments to achieve a good asthma control level with self-management and proper medicament treatment (Allen & Jones, 1998).

Some things that can affect a person's knowledge were education, jobs, age, interest, experience, culture, and information (Mubarak, Chayatin, & Rozikin, 2007). Almost half of the total number of respondents who have good knowledge and enough knowledge are the respondents who are high school graduates, Diploma, and Undergraduates. The same result is shown in research by Bachtiar, Wiyono, & Yunus in 2011 that stated if almost half of the total number are high school graduates (Bachtiar, Wiyono, & Yunus, 2011). The most distribution came from junior and high school graduates with moderate knowledge (Ningrum, Muhlisin, SKM, & Maliya, 2012). Most of the respondents who are over 46 years old have an uncontrolled asthma level, and most of the respondents who are over 45 years old have sufficient knowledge. Wahyuni & Yulia in 2014 stated if the recurrence of asthma will be more frequent as the age increases, this is due to decreased pulmonary function and inflammation of the airway resulting from a declining immune system (A. H. Wahyuni & Yulia, 2014).

Someone with asthma can control the recurrence of asthma that he suffered from by having good knowledge about the disease, with a good knowledge this person knows how the symptoms of asthma and how to prevent the recurrence by avoiding the causes of asthma, maintaining a healthy lifestyle and initiating to go to healthcare more often for a check-up. Good knowledge of treatment also has a huge role in controlling asthma recurrence, proper medicaments therapy combined with avoiding the trigger factor of asthma will bring a major impact to the controlled asthma control level.

Someone's knowledge is also influenced by the level of education, on high school or college level, respondents can absorb information about asthma and its prevention. Information about the asthma disease is obtained from the mass media, information from the trustworthy person (family, relatives, etc.) as well as the health officer during the respondents conducting a check-up which later impacted the asthma control level, the higher levels of knowledge, the better the asthma control level is. Knowledge is not the only prevention of asthma recurrence. The level of asthma control level is also influenced by some things such as age and immunity system.

The relations between attitudes and asthma control level on asthma patients

Table 2. The relations between attitudes and asthma control level in treatments

Attitude	Asthma Control Level					
	Fully-controlled		Well-controlled		Uncontrolled	
Positive	0	0%	28	52,8%	25	47,2%
Negative	0	0%	0	0%	10	100%
Total	0	0%	28	44,4%	35	55,6%

Respondents who had a positive attitude of most levels of control are well-controlled, which consists of 28 people (52.8%), while the respondents who have a negative attitude with an uncontrolled asthma control level consist of 10 people (100%). The research found that there is a relationship between attitude and asthma control level, which means the more positive the attitude is, the more controlled the asthma recurrence is. Attitude has not been an act or activity, but rather a predisposition to the action of a behavior (Notoatmodjo, 2012). One's attitude is closely related to the level of knowledge they have before. Positive attitudes will form positive behaviors, vice versa. It is following the opinion of Sarwono in 2007 that the change of individual attitudes and behaviors began with the stage of identification and then internalization (Sarwono, 2007). A mother's positive attitude can prevent her child from relapse of pneumonia, a mother's actions in the cause of the recurrence factor of pneumonia in the child derived from the positive attitude that the mother has (Alfaqinisa, 2015). A significant relationship between asthma prevention knowledge, asthma prevention attitudes with asthma precautions, this attitude is formed because the individual has a good level of knowledge about what happened to him, which later will form a tangible action to avoid

the trigger factor of asthma recurrence (Gu & Hongsranagon, 2012).

The distribution of respondents in this study almost entirely positive. The positive attitude here is that the respondent is correct in avoiding the trigger factors of asthma. While the negative attitude, the respondent is not aware yet about what to do to help to control asthma. This research is supported by Wolagole in 2012, which stated that most have a positive attitude towards the prevention of asthma, and almost half of them have a negative attitude in controlling asthma (Wolagole, 2012). The positive attitude of the respondents in controlling asthma is by their willingness and motivation to prevent the trigger factor of asthma, so it is expected that the asthma control level is increasingly controlled.

Almost all respondents who suffer from asthma for more than five years have a positive attitude in the prevention of asthma. One of the most positive attitude-forming is an experience (Notoatmodjo, 2012). A person's attitude is formed based on what he knows, the more knowledge he has, the more positive the attitude he shows to control the asthma recurrence which then will form action in avoiding various trigger factors, thus, helping individuals with asthma in controlling the recurrence of asthma. Attitudes are also influenced by several factors, such as experience, how long someone

suffers from asthma is an experience for respondents in facing asthma, with a time someone has asthma, the patient will be able to understand the symptoms of asthma days by days so the

respondents will have a more positive attitude in preventing the recurrence.

The relations between actions and asthma control level in asthma patients

Table 3. The relations between asthma precautions and asthma control level in treatments

Asthma Precautions	Asthma control level						Total	Total
	Fully-controlled		Well-controlled		Uncontrolled			
Well	0	0%	23	63,9%	13	6,1%	36	100%
Moderate	0	0%	4	19%	17	81%	2	100%
Low	0	0%	1	16,7%	5	83,3%	6	100%
Total	0	0%	28	44,4%	35	55,6%	63	100%

Respondents who had good asthma precautions the majority have a well-controlled asthma control level, which consists of 23 people (63.9%), and respondents who have low asthma precautions most have an uncontrolled asthma control level, which consists of 5 people (83.3%). This result indicates that there is a relation between asthma precautions and asthma control level better asthma precautions will result in better asthma control level. This research is supported by the theory of Stimulus Organism Response, which proposed by Skinner in 2019 that caused by certain stimuli (Skinner, 2019). This kind of stimulus is called eliciting stimulation because it raises a relatively fixed response. Practice or action means conducting, doing, or practicing what is known (knowledge) and what is being addressed (well valued). The action, in this case, is an action to prevent asthma recurrence. Wibisono & Winarjani stated that some studies have mentioned that in the presence of asthma healing, if the exposure of the allergens decreases, the exposure of these allergens can be avoided by proper action (Wibisono & Winarjani, 2010). Action is everything that is done to prevent the occurrence of recurrence of asthma. This action consists of consuming nutritious food, avoiding fatigue, avoiding trigger factors such as dust and others, possess and knows how to take asthma medication, knowing the importance of regular check-ups (Bakar, Rohma, Kurnia, & Qomariah, 2019; Ningrum et al., 2012). An asthma precaution that is almost entirely answered by the respondents is the domain of consciousness in doing self-checked to the healthcare and supported by the respondents who have good asthma precautions mostly visit the hospital within once per 2 months to do a check-up. This research is supported by the theory of

Adoption Practice action which stated that if an individual performs an action rather than just a routine or only mechanism but an asthma precautions modification has been done in a good category owned by most of the female respondents which proved by almost all-female respondents who regularly self-checked to the healthcare most of the female respondents suffer from uncontrolled asthma (Notoatmodjo, 2012). The frequency of asthma recurrence as much as three times a day is experienced by most women likely caused by fluctuations in their hormone levels and also related to menopause stage where the hormone levels decrease which lowers the function of body organs including the lungs thus causing susceptible to respiratory diseases including asthma (Hostiadi, 2014; Syahira, Yovi, & Azrin, 2015). If the high prevalence of asthma is not controlled in women related to the incidence of asthma, adult women are more susceptible to asthma than men (Andayani & Waladi, 2014). Asthma is a stimulus for the prevention of recurrence, and people who suffer from asthma will make this disease a deep stimulus in maintaining a healthy life. This stimulus will become a person's practice or action in avoiding the trigger factors of the recurrence of asthma that which implemented by several actions such as regular check-ups, avoiding dust, wearing warmer clothes when it is cold, and avoid smokers. Asthma precautions are influenced by several factors such as knowledge and attitude, good knowledge about asthma preventions combined with a positive attitude towards the recurrence preventions will create a good practice or action in preventing the asthma recurrence, so that, the asthma control level will show a better result on asthma patients (A. S.

Wahyuni, Soeroso, Wahyuni, Amelia, & Alona, (2018).

The awareness of doing regular check-ups to healthcare has an important role, and regular check-ups will increase the asthma control level of the respondents, by doing regular check-ups respondents could get regular medications that consumed every day. So that with frequent medications, respondents would be better in controlling the asthma recurrence. The other domain is the effort to avoid what causes asthma considered very effective by the respondents in avoiding the recurrence so people who suffer from asthma will have a better ability to control the asthma recurrence. Asthma precautions are also influenced by several factors, such as the level of education, prolonged suffering from asthma. The more people know about the diseases that they suffered from, the better the effort is made in preventing asthma recurrence. A positive attitude towards the prevention of asthma recurrence is crucial because the symptoms of asthma recurrence could occur at any time due to intrinsic and extrinsic factors.

CONCLUSION

There is a meaningful relation between knowledge, attitude, and asthma precautions and asthma control level on asthma patients. It is proved by the different proportions of the knowledge of a well-controlled and uncontrolled asthma level. For further researchers, it is hoped that this study can be the first data to find out more what factors that cause asthma recurrence and find the best solution in preventing the asthma recurrence.

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