Different of Asthma Control Level in Suburban and Urban Areas

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Keyword: Asthma control level, Suburban and urban area

Abstract: **Background:** Asthma is a reversible and temporary respiratory disorder. The level of asthma control can be influenced by many factors, such as the environmental factor. This research aims to depict the differences asthma control level in suburban and urban communities. This research conducted in Kendalsari and Kedungkandang, Malang, East Java. **Method:** This research use observational analytic with crosssectional approach. Sample were taken by simple random technique as many as 50 respondents. Patient asthma 18-60 years with 20 women and 5 men in each areas The Asthma control levels were measured using Asthma Control Test (ACT). Data were analyzed using the Mann Whitney Test. **Result:** Asthma control level data, In suburban areas uncontrolled patients 60% and 40% partially controlled. In urban areas there are 28% of patients uncontrolled and 72% partially controlled. Distribution age of asthma patients predominantly 26-45 years (66%). Distribution education level predominantly in senior high school 18 patients (36%). The result of analysis showed a difference of asthma control level in suburban and urban areas (p 0,024). **Conclusion:** There are different asthma control level in suburban and urban areas in Malang, East Java (α0,05).

1 INTRODUCTION

Asthma is health problem in the world, that is not only infected in progress countries but also in developing countries. According from the Global Initiative for Asthma (GINA) it stated estimated number of asthma in the world until 300 million people and number of deaths continuing to increased for 180,000 people/year (GINA, 2017). Asthma is can’t be cured but it can be controlled. Asthma can attack a children, adults, oldster, men and women (Prasetya, 2011). Asthma management focused in how to reduce symptoms, restrain recurrence and decrease used corticosteroids or can be controlled asthma (GINA, 2017).

Asthma symtoms can be monitored by measuring instrument, it’s Asthma Control Test (ACT). Asthma Control Test is a evaluation method by assessing the final score obtained from answers questions in asthma patients. The results of these scores, are classified into 3 categories: fully controlled, partially controlled and uncontrolled (PDPI, 2007)

East Java is one of province with a high prevalence of asthma, this prevalence is 5.7%. Malang is one of district in East Java with a high prevalence of asthma, this prevalence is 4%, highest asthma patient (18.3%) present at 15-44 years of productive age (RISKESDAS, 2013).

Kendalsari area’s is the middle of the city with a population of 99,359 people (BPS, 2014). Kendalsari located in the middle of town. The area is border to various office areas, health facilities, and educational facilities (BPS, 2014). Puskesmas Kendalsari (Community Health Center) is one of Puskesmas at located in sub district lowokwaru with high asthma prevalence. The number patient of asthma get treatment at Kendalsari community health care in June - September was 92 patients.

Kedungkandang located at suburban area in district of malang with a population of 94,663 people (BPS, 2014). Kedungkandang located in the suburban of city. The area is border to industrial, tradisional market and trading area. Puskesmas Kedungkandang (Community Health Center) is one of Puskesmas at located in sub district with high asthma prevalence. The number patient of asthma get treatment at Kendalsari community health care in June - September was 106 patients. This research was to explain the difference of asthma control level in urban and suburban areas of Malang East java.
2 METHOD

This research use observational analytic with crossectional approach. A population in this study is asthma patients with treatment in Kendalsari and Kedungkandang community health care at April-September 2017.

This research was conducted in patients asthma with 18-60 years. This sample was a 20 women and 5 men in each area. Technique sampling use simple random sampling with a total 50 respondents. The research was started in January-February 2018. The collection data use analysis questioner ACT (Asthma Control Test) questionnaire to measure the level of asthma control. Analysis data use Mann Whitney test ($\alpha$=0.05).

3 RESULTS

Based on data with the number of samples of 50 respondents, in the Urban and Suburban areas

Table 1: Distribution of age in Urban Area represent in urban areas average asthma patient at 39 years. The youngest is 24 years old and the oldest at the age of 57 years.

<table>
<thead>
<tr>
<th>Age</th>
<th>Mean</th>
<th>Mode</th>
<th>Min-Max</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>39</td>
<td>37</td>
<td>24-57</td>
</tr>
</tbody>
</table>

Distribution of Age Urban Area

Figure 1: Represent in urban area the majority of respondents at the age of 45-60 (68%)

Table 2: Distribution of age in Suburban Area represent in suburban areas average asthma patient at 40 years. The youngest is 24 years old and the oldest at the age of 57 years.

<table>
<thead>
<tr>
<th>Age</th>
<th>Mean</th>
<th>Modus</th>
<th>Min-Maks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40</td>
<td>35</td>
<td>24-57</td>
</tr>
</tbody>
</table>

The 9th International Nursing Conference 2018

"Nurses at The Forefront in Transforming Care, Science, and research"
Chi Square obtained p 0.015 (α 0.05), it means there is a correlated between age with level of control asthma

Table 4. Correlated education level with asthma control level

<table>
<thead>
<tr>
<th>Asthma Control</th>
<th>Education</th>
<th>Total</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ES-JHS</td>
<td>SHS-BD</td>
<td></td>
</tr>
<tr>
<td>Partially</td>
<td>8</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>Uncontrolled</td>
<td>16</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>26</td>
<td>50</td>
</tr>
</tbody>
</table>

Table 4 represent about majority patients are partially controlled. Most Education level respondent at senior high school – Bachelor degree. The result of statistic test with Chi Square obtained p 0.002 (α 0.05), it means there is a correlated between education level with level of control asthma

Table 5. Different asthma control level in urban and suburban area

<table>
<thead>
<tr>
<th>Asthma Control Level</th>
<th>Group</th>
<th>n</th>
<th>Mean Rank</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Urban</td>
<td>25</td>
<td>21.5</td>
<td>0.024</td>
</tr>
<tr>
<td></td>
<td>Suburban</td>
<td>25</td>
<td>29.5</td>
<td></td>
</tr>
</tbody>
</table>

Table 5 represent about results of statistical tests with Mann Whitney, obtained results p 0.024 (α 0.05), it’s means there are differences asthma control level in urban and suburban areas.

4 DISCUSSION

This research indicate in urban area and suburban areas, average of age represent is 39-40 years. These results be accordance to Mergani (2017). Majority of asthma suffered in elderly patients. Age of majority respondents are in the productive period, so that possible increased pollution exposure, high activity and increased of stress. This point may trigger effect of asthma symptoms or asthma recurrent (Merghani & Alawad, 2017).

Based on age category, there is was an increase incidence of asthma in line with increasing of age. incidence of asthma aged 18-24 years in urban areas 8% and 14% in suburban areas. It is related to the
pattern of adolescent life that can be effect asthma symptoms (Talreja, 2011).

Based on age category in urban area, the majority of asthma sufferers are 25-44 years with a percentage of 68%. In the suburban area, majority of respondents are 25-44 years with a percentage of 57%. These results are consistent with statistical data of asthma patients from the Center for Disease Control and Prevention (CDC) and the National Center for Health Statistics (NCHS), it say in productive patients have the greatest asthma prevalence (Talreja, 2011).

The difference percentage age category between urban and suburban, represent in urban areas have a higher percentage of age at 25-44, it’s related to productivity level, this trigger a potential respondents are often pollution exposure, high activity, and increased stress levels. A person in productive age will be more frequently exposed to pollution that can cause asthma symptoms (Atmoko, 2011). These people are often confronted with work problems, which can trigger stress, stress factors can also trigger asthma symptoms (Dorevite 2008).

Asthma in adolescents can still survive to adulthood and there is also asthma can disappear for years but can reappear in related a getting older. These older people had a decrease a lung function and more risk for inflammation airway (Barnes, 2015).

Analysis with Chi square (α 0.05), age correlation with level of control of asthma, p value 0.015. This result represent there is a correlated between age and asthma control level. This research in line with Talreja’s (2011). Age may be affect asthma control rates. Levels of asthma control are decrease with older age (Talreja, 2011). Age may be affect to control asthma because in older people, system decreases to T lymphocyte dysfunction (Barnes, 2015).

Lymphocyte T are increases susceptibility of virus or bacterial infection and causes damage to remodeling airways. Decreased lung function in elderly people affect to decreased respiratory muscle strength and decreased elastic pulmonary recoil with increased stiffness a chest expansion (Barnes, 2015).

Based on education level in urban area represented the majority of respondents have senior high school of level education (52%) and in suburban area majority have junior high school of level education (48%). The distribution of asthma control level based on educational level confident to most uncontrolled asthma is affect by respondents with junior high school as many as 16 respondents. A partially asthma control level more higher on Senior High School-Bachelor Degree as many as 20 respondents, there are different are elementary high school – junior high school education with 8 respondent with partially asthma control level.

Result of statistical test with Chi square (α 0.05), Educational level with level of control asthma, p value 0.002. There is a relationship between education level and asthma control levels. This research in line with Atmoko (2011) this research represented of the higher level education can improve control of asthma. Education affects to people for the attitudes, actions, thoughts of a person. There are different affect for normally has primary, middle or upper education, each has different characteristics for controlling asthma (Lara, 2012).

Education can be affect the mindset, higher education should be the better the consideration and health behaviour. Behaviour can be influence from science and education, it will impact in actions, attitudes, and making decision. Education will be influence to this, influencing factors such as the environment (Adam, 2008). Higher education indicate that people with to be more concerned about health, so efforts to improve health status are pursued by treatment to health facilities (Adam, 2008).

People with higher education level correlated more asthma controlled level. It’s possible the level of education consistent with the ability to receive health information from mass media or health workers. Someone had a higher level of education, it mostly has a good perception. Higher education as to more easily receive information, and can participate actively in solve health problems (Skloot et al., 2016).

Asthma control level in urban area indicate partially controlled (72%) and Uncontrolled (28%). Suburban area had the partially controlled respondents (60%) and Uncontrolled (40%). This result be accordance to Atmoko (2011) the majority of respondents have partially controlled asthma control levels. The level of asthma control is influenced by various factors including age, sex, genetics, smoking, etc (Atmoko, 2011).

Analysis statistic data test with Mann Whitney (α 0.05), difference of asthma control level urban area and suburban area got p value 0.024. There is a difference in asthma control level in urban areas and suburban areas. This study differs from the research [9] that in urban areas, asthma control levels to decrease trend. Differences in asthma control level in urban and suburban areas are due to many factors, such as regional characteristics,
education level, pollution, socioeconomic and health services (Lara, 2012).

The characteristics of the suburban areas an industrial area, near traditional market and trading areas. Environmental factors are very influential with the occurrence of asthma symptoms, industrial area could be a trigger an increase in pollution. Pollution is instrumental in triggering asthma symptoms. In the Urban area, areas tend to be in the office area and health facilities and educational facilities (Dorevitc, 2008).

In Urban area, majority of respondent’s education level is senior high school and Suburban area majority of respondents have junior high school. It’s indicates a different level of education, that is related to consideration and behavior. The mindset generated from science gained from education will have an impact on actions, attitudes, actions in solving health problems (Sklloot et al., 2016).

5 CONCLUSION

There is a different of asthma control level in urban areas and suburban areas. The level of education affects the level of asthma control, futhermore Age is related with asthma control levels, older people has high risk to decrease asthma control level.

REFERENCES


