DESCRIPTION OF BLOOD HEMOGLOBIN LEVELS IN VAPE USERS IN THE HEXOHM COMMUNITY BENGKULU CITY IN 2021

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Abstract
E-cigarettes are a new trend in Indonesian society, especially young people, not only men but also women who are fans of this electric cigarette which can be called a vape or vapor, this electric cigarette uses liquid (liquid) as a substitute for tobacco. Then this liquid turns into thick smoke. It is known that in the liquid vape content there is diacetyl which is an additive that is usually used in the production of foods such as popcorn, caramel and butter that can cause addiction. Diacetyl which is added to the liquid causes serious inflammation, which results in the lungs not having a place to exchange oxygen with CO, causing shortness of breath and difficulty breathing deeply, thus making hemoglobin levels increase because the body cannot supply enough oxygen. This happens because when smoking hemoglobin instead of taking the oxygen the body needs but instead binds to carbon monoxide. The type of research used in this study is descriptive research, namely research conducted to describe blood hemoglobin levels in electronic cigarette users in the Hexohm community of Bengkulu city in 2021. It is known that from the 40 respondents studied, almost most of them have normal hemoglobin levels and most have abnormal hemoglobin levels. Normal hemoglobin level is 12-15 g/dl. Based on the results of the examination of Hemoglobin in vape users in the Hexohm community levels in Bengkulu City, it showed that the respondents in the higher category were 22 respondents, and in the almost normal category 18 respondents. Suggestions for other researchers so that it can be used as a reference that will later be useful for further research. And it is hoped that further research will be better.

Keywords: Hemoglobin, Vape, Vapor, Electric cigarettes

1. Introduction
E-cigarettes are an innovation from conventional cigarettes to modern cigarettes (Jannati, 2019). E-cigarettes are also considered safer than conventional cigarettes (Rohmani et al., 2018). E-cigarettes are one of the Nicotine Replacement Therapy (NRT) using a way to gradually reduce levels of nicotine. Because the content of nicotine is lower than in conventional cigarettes and does not use tobacco. The results of a survey conducted by the International tobacco...
control survey data show an increase in the number of consumers of vapor teenagers from year to year. In Korea teen vape users in 2014 recorded 9.4%, in the UNITED Kingdom 18%, in the United States above 10%, in Indonesia alone in 2011 recorded 0.3% (Baqiyatus, 2018).

In Indonesia itself the use of e-cigarettes is still numerous and increasing mushrooming. Until now, researchers have not obtained definitive data on how many e-cigarette users in Indonesia, but Riskesdas (2013) conducted a survey of total adolescents found 2.1% of adolescent smoked e-cigarettes (vaporizer) over the last 30 days, and this happened in 3% of teenage boys and 1.1% of adolescent girls and for Bengkulu and West Java provinces 27.1% (Alawiyah, 2017).

According to the Indonesian Food and Drug Administration in 2015 that e-cigarettes were originally created as one of the tools used to stop smoking or nicotine replacement therapy (NRT) by reducing nicotine levels of e-cigarettes gradually under the supervision of doctors (Darmawanet al., 2019). Research conducted by the Center for Tobacco Control Research and Education University of California concluded that e-cigarette use is no better than tobacco cigarettes and does not adequately help a person overcome tobacco smoking addiction. BPOM explains that a number of dangers are contained in e-cigarettes, such as liquid nicotine content and solvents propylene, glycol, dieter glycol, and glycerin. If the ingredients are heated, it will produce nitrosamine compounds that can cause disease, one of which is cancer (Walelen g et al., 2018).

National Agency of Drug and Food Control or BPOM explained that a number of dangers contained in e-cigarettes, such as the content of liquid nicotine and solvents propylene, glycol, dieter glycol, and glycerin (Marisa & Lestari, 2021). Known in the content of liquid vape there is diacetyl which is an additional ingredient that is usually used in the production of foods such as popcorn, caramel and butter that can cause cravings. Diacetyl added to the liquid becomes a serious inflammation, which causes the lungs to have no place in exchange for oxygen with carbon monoxide causing shortness of breath and difficulty breathing deeply (Baqiyatus, 2018). In addition to these ingredients, the amount of chemicals found in e-cigarettes is less than in tobacco cigarettes, chromium and nickel are found to be 4 times more in some types of liquid vaporizers than in tobacco cigarettes (Indra et al., 2015).

The effect of e-cigarettes on hemoglobin levels is that hemoglobin levels will increase because the body cannot supply enough oxygen. This happens because when smoking hemoglobin instead of taking the oxygen that the body needs but instead binds to carbon monoxide that is in electronic cigarettes. Therefore, the body also feels panic, signaling low oxygen levels because it is not bound by hemoglobin. This increase is also influenced by the length of smoking and the number of cigarettes smoked per day (Han, 2019).

According to the data that We surveyed in the Hexohm community of Bengkulu city numbered 72 people who actively use e-cigarettes, many liquids they use per day as much as 10-15 ml. in this community e-cigarette users have been using e-cigarettes for more than 1 year. Based on this background, the author is interested in researching with the title "Overview of Blood Hemoglobin Levels in Vape Users in Hexohm Community in Bengkulu City in 2021".

2. Materials and Methods

The type of research used in this study is descriptive research that is research conducted to describe blood hemoglobin levels in e-cigarette users in the Hexohm community of Bengkulu city in 2021. The method of examination using easy touch HB tools. The type of data collected is primary data, namely by conducting a direct examination of Hemoglobin levels in vape users in the hexohm community of Bengkulu city. The tools use in this study were Hb strips, lancets, lancet pens, alcohol cotton, hanscoo, dry cotton and the material used was capillary blood.
3. Results and Discussion

Blood Hemoglobin Level research in vape users in hexoh commutation in Bengkulu city has been conducted with samples obtained by 40 samples. After the data was collected, the data was processed and analyzed using univariate analysis. As for the results of the research obtained.

Table 1: Distribution of Frequency of Respondents Based on The Picture of Blood Hemoglobin Levels in Vape Users in Hexohm Community in Bengkulu City in 2021.

<table>
<thead>
<tr>
<th>Hb</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>18</td>
<td>45%</td>
</tr>
<tr>
<td>Abnormal</td>
<td>22</td>
<td>55%</td>
</tr>
<tr>
<td>Sum</td>
<td>40</td>
<td>100%</td>
</tr>
</tbody>
</table>

Based on table 1 above shows that most vape users have abnormal hemoglobin levels as much as 55% and another 45% have normal hemoglobin levels. Based on research that has been conducted on blood hemoglobin level examination in vape users in the hexohm community of Bengkulu city in 2021. The research sample of 40 samples contained almost half of 18 respondents normal hemoglobin levels and Most of the 22 respondents abnormal Hemoglobin levels.

The results of the blood hemoglobin level test in vape users in the hexohm community of Bengkulu city showed that almost some respondents fall into the normal category, based on my research respondents have normal hemoglobin levels due to a healthy lifestyle and exercise regularly, they use vape or e-cigarettes but they also maintain healthy body and eat healthy food.

Research by Makawekes et al obtained blood hemoglobin levels in men who use e-cigarettes will increase, Increased hemoglobin levels in men who use e-cigarettes due to the presence of carbon monoxide in e-cigarettes that bind hemoglobin to form hemoglobin carboxy. The event resulted in reduced function of hemoglobin so that the body compensates for the decrease in oxygen levels by increasing hemoglobin levels, this is in line with the results of the research I obtained in the hexohm community of Bengkulu city that most vape users in the hexohm community of Bengkulu city have abnormal hemoglobin levels.

This increase in hemoglobin occurs because in the content of liquid vape there is diacetyl which is an additional ingredient that is usually used in the production of foods such as popcorn, caramel and butter that can cause cravings. Diacetyl added to the liquid becomes a serious inflammation, which causes the lungs to have no place in exchange for oxygen with carbon monoxide causing shortness of breath and difficulty breathing deeply (Baqiyatus, 2018).

Carbon monoxide contained in cigarettes has a great tendency towards hemoglobin, making it easier for the two to bond together to form a carboxy hemoglobin. This results in hemoglobin not being able to bind oxygen to be released into various tissues, resulting in tissue hypoxia and decreased oxygen levels by increasing hemoglobin levels as compensation. This increase is influenced by the length of smoking and the number of cigarettes smoked per day (ES et al. 2019 Han, 2019).

4. Conclusion

Based on research on blood hemoglobin levels in vape users in the hexohm community, it obtained more abnormal blood hemoglobin levels. Overall of the 40 respondents studied, almost most had normal hemoglobin levels and most had high or abnormal hemoglobin levels. Suggestions: Can be used as a reference which will be useful for further research. And it is hoped that for further research will be better if you choose another method in determining the sample and examining it.
Acknowledgments
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References


