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## Overview of Knowledge about the Causes of Halitosis and Its Treatment in Society (Literature Review Study)

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### ABSTRACT

Halitosis is an oral health condition characterized by continuous unpleasant breath odour. The causes of halitosis can be of both intraoral and extraoral origin. Public knowledge about halitosis is needed because it can help in preventing and dealing with halitosis. The purpose of this study is to find out an overview of public knowledge about the causes and treatment of halitosis. This research uses the literature study method, namely the method of collecting library data, reading and recording, and managing research materials. Based on the results of literature reviews in 8 journals, it can be concluded that the picture of knowledge about halitosis and its treatment in the community is relatively moderate. People know that halitosis is a poor oral health condition characterized by an unpleasant breath odour. People know that halitosis comes from poor oral hygiene as well as systemic diseases, halitosis can be treated by brushing your teeth, consuming fresh fruit and using mouthwash.

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### INTRODUCTION

Dental and oral health is often the umpteenth priority for some people, it is well known that teeth and mouth are a gateway for the entry of germs and bacteria that it can interfere with other health.<sup>1</sup> Dental and oral health in Indonesian society is still something that needs serious attention from health workers, both dentists and dental nurses. This can be seen from the percentage of the population who have dental and oral health problems that continue to increase.<sup>2</sup>

The results of Basic Health Research (RISKESDAS) in 2014 and 2019 showed that the national prevalence of dental and oral problems in 2007 and 2013 increased from 23.2% to 25.9%, and increased in 2018, namely 57.6% of the population who had dental and oral problems. This data shows the low knowledge, attitudes, and behaviour of the community in caring for their dental and oral health.<sup>2</sup>

Dental and oral health is part of body health that cannot be separated from one another, because dental and oral health will affect the

overall health of the body.<sup>9</sup> Dental and oral health can be obtained through healthy life attitudes and behaviours as well as the ability to maintain oneself in the community.<sup>10</sup> In addition, healthy living behaviours and the ability to maintain oneself can also improve oral hygiene and can be used as a benchmark to find out the high or low health status of teeth and mouth in the community.<sup>3</sup>

Maintaining healthy teeth and mouth can be done by paying attention to dental and oral hygiene, thus making teeth healthier. Healthy teeth are an important need that influences communication, socializing, and interaction with others. However, oral health is not only limited to having healthy teeth but is free from all oral diseases including conditions in the oral cavity, one of which is the problem of halitosis which can affect a person's quality of life.<sup>7</sup>

Halitosis is an oral health condition characterized by the continuous discharge of unpleasant breath odour.<sup>4</sup> Halitosis can inhibit and cause social exclusion. This often happens to people who are in their work more in contact with

the public, so they must maintain cleanliness and oral health to avoid unpleasant bad breath that reduces confidence and self-confidence.<sup>8</sup>

The main cause of halitosis is the release of volatile sulphur compounds (VSCs) which are the result of the activity of anaerobic bacteria in the mouth.<sup>18</sup> Apart from infections in the oral cavity and hormonal factors, bad breath faced or experienced by a person has many causes including throat, lung and stomach disorders, smoking habits and consumption of certain medications.<sup>17</sup> There are some medicines that have the effect of dry mouth and often cause an unpleasant smell from the mouth.<sup>5</sup>

Many people experience a state of unpleasant smell in their mouth (halitosis) but lack awareness of the state of the mouth they experience.<sup>6</sup> They think that only by brushing their teeth can bad breath be resolved, even though the condition requires continuous treatment to get maximum results.<sup>5</sup>

Based on the background above, researchers are interested in conducting research on the picture of knowledge about the causes of halitosis and its treatment in the community. The formulation of the problem in this study is, "How to describe knowledge about the causes of halitosis and its handlers in society". This study aims to explain the level of knowledge about the causes and treatment of halitosis in the community.

**METHOD**

The type of research used is the study of literature. The literature study method is a series of activities related to the methods of collecting library data, reading and recording, and managing research materials (Zed, 2008:3).

A literature study looking for theoretical references that are relevant to the case or problem found.

The reference contains about:

1. Public Knowledge
2. Halitosis
3. Halitosis Causes
4. Halitosis Treatment

The data used comes from books, journals, scientific articles, google scholar, PubMed which contains an overview of knowledge about the causes of halitosis and its treatment in society.

**RESULTS**

Research Journal Search

Results Below are some journals on nutritional status and the eruption period of permanent teeth.

No.	Researcher/Title	n	Research Results
1.	Cristy M, dkk (2018) Overview of knowledge about halitosis in workers at Manado port	7	Of the 77 subjects, 50.7% had knowledge in the moderate category. The subject knows cigarettes, alcohol, and food residues that are not cleaned can cause halitosis.
2.	Van B.G (2018)/ Valence, knowledge, and perception of halitosis in USU Medan dental clerkship students	100	Level of knowledge about halitosis based on the highest percentage of knowledge levels of respondents in the sufficient category (43%), Perceptions of halitosis showed that respondents who felt they had halitosis as much as 41%.
3.	Ade M, dkk (2018)/ Study of people's habits in consuming betel nut in maintaining dental and oral health in Fulai village in 2017	5	People have fairly good knowledge about consuming betel nuts which makes teeth strong and eliminates the smell of bad breath.
4.	Alwinda P, dkk (2019) Knowledge of halitosis management in oral health problems	100	The average subject knows about halitosis and halitosis prevention by consuming fruit and using mouthwashes
5.	Novianti PH, dkk (2020) The relationship between the level of knowledge and dental and oral diseases in students at Pesantren Manarul Huda	35	Knowledge of dental and oral diseases is most numerous with sufficient categories and almost the entire subject has dental and oral health problems. It was concluded that there is no link between the level of knowledge and dental and oral diseases.

	Bandung		
6.	Dinisy C, dkk (2020) The influence of behavior and level of knowledge about oral dental hygiene on the occurrence of halitosis in students	20	There is an influence of behavior and level of knowledge about oral dental hygiene on the occurrence of halitosis in STIKes Siti Hajar students. Most subjects 85% knew about halitosis and half of the sample had OHI-S with moderate category.
7.	Joanna N, dkk (2022) Assessment of the results of the training to recognize the causes of halitosis and its prevention by maintaining oral dental health in residents of French Walk Apartment, North Jakarta	21	There is an increase in the knowledge of the subject after attending the training. The subject learned that halitosis is a dental and oral health problem that can be derived from systemic diseases, food and dry mouth. Halitosis can be prevented by brushing your teeth and using mouthwash.
8.	Rizki FP (2022) The level of knowledge of patients who visit the Rantauprapat Health Center on halitosis	102	The level of knowledge about the aetiology of halitosis was 47 people (46.1%), the level of knowledge about the consequences of halitosis was 40 people (39.2%), the level of knowledge about halitosis prevention was 51 people (50.0%) and the level of knowledge about halitosis treatment was 57 people (55.9%).

## DISCUSSION

Halitosis is a term to define unpleasant odours caused by the free Volatile Sulfur Compounds (VSCs) caused by the decay activity of microorganisms. The causes of halitosis are usually due to poor dental and oral hygiene, deep caries, periodontal disease, infections of the oral cavity, dry mouth, consuming cigarettes, mucosal

ulceration, pericoronitis, food waste as well as tongue coating.

Poor oral hygiene is a risk factor for halitosis. The practice of oral hygiene is influenced by the sociodemographic environment, level of education, and socioeconomic status that contributes to the knowledge of maintaining dental and oral hygiene. In general, people do not understand how to distinguish the causes, prevention and countermeasures. This relates to one's behaviour and knowledge. The main cause of VSC levels increases in a person's oral cavity when there is low awareness to carry out maintenance of oral cavity hygiene. The frequency of perception of halitosis is measured by linking the level of knowledge, behaviour and hygiene of the teeth and mouth to the occurrence of halitosis.

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Based on the results of a study entitled An overview of knowledge about halitosis in workers at the Manado port. Judging from 77 respondents, more than half of the respondents had knowledge of the moderate category (50.7%), and respondents knew that cigarettes and alcohol can cause halitosis. This is in line with the theory in the book entitled How to quickly overcome bad breath, that the bad breath experienced by a person is not only due to infection in the oral cavity, but it can be from other sources such as smoking and consuming alcohol which can have the effect of making dry mouth.<sup>17</sup>Smokers have a greater plaque and calculus score compared to non-smokers, meaning that smokers have worse oral hygiene than non-smokers, poor oral hygiene conditions are one of the causes of bad breath (Halitosis).<sup>27</sup>

The results of the study entitled Prevalence, knowledge, and perception of halitosis in USU Medan dental clerkship students. With a total of 100 respondents, the highest level of knowledge about halitosis was in the sufficient category. The results of this study also showed that almost all respondents knew that caries and kidney disease could cause halitosis, most respondents knew that diseases of the lungs and nose could cause halitosis (75%), and almost all respondents knew that mouthwash could reduce halitosis. This is due to the effect of a mouthwash which causes a sense of freshness to its users.<sup>27</sup>The results of this study are in line with the study entitled The relationship of volatile sulphur compound (VSC) levels, flow rate, and

salivary pH to the incidence of halitosis in menopausal women. Halitosis can be of intraoral origin such as caries. Deep and untreated caries provide a retention site for food debris and bacterial plaque that allows causing halitosis. Causes of extra-oral halitosis, due to the presence of bacterial activity in systemic diseases that cause tissue decay or cause tissue necrosis and the production of odorous gases.<sup>19</sup>

Based on the results of a study entitled Study on people's habits of consuming betel nut in maintaining dental and oral health in Fulai village in 2017 with at least 5 numbers of informants the community knew that chewing betel nut mixed with betel nut and lime can prevent bad breath and make fresh breath.<sup>29</sup> This research is in line with research on the benefits and toxicity of betel nut (*Areca catechu*) in human health explaining that betel nut is used as a slicing ingredient to fight halitosis because it can overcome microbial growth or kill microorganisms (fungi and bacteria). Bacteria that decompose proteins in the mouth can secrete gram-negative anaerobic bacteria that cause halitosis.<sup>30</sup>

The results of the study entitled Knowledge of handling halitosis in oral health problems. The results of a survey of 100 respondents showed that almost all respondents recognized that bad breath is one of the health problems and one of the triggers for halitosis is dental caries. This knowledge is obtained due to factors that affect people's knowledge such as their environment. Some respondents think it is true that halitosis can be overcome by eating fruit (45%).<sup>31</sup> This is in accordance with the theory in the book entitled Handbook of nonprescription drugs an interactive approach to self-care. Fresh fruit is one of the non-pharmacological treatments for halitosis. Almost all respondents responded correctly that antiseptic mouthwash can overcome bad breath (92%), this study is in line with a study entitled Oral malodor-A cause or disease in humans which states that mouthwash is used as a chemical approach with components such as cetylpyridinium chloride (CPC) can combat bad breath.<sup>32</sup>

Based on the results of a study entitled The relationship of knowledge levels with dental and oral diseases in students at the Manaru Huda Islamic boarding school in Bandung, only a small percentage of respondents already knew about the causes of halitosis including tartar, swollen

gums and cavities (36%). Dental caries is characterized by progressive enamel and dentin damage caused by the activeness of bacterial metabolism.<sup>33</sup> This research is in line with the research entitled The level of knowledge of the dangers of smoking for oral dental health in students of SMK Negeri 8 Manado. Halitosis can be caused by a lack of a clean mouth. Tartar is a layer of "biofilm" that attaches to the surface of the gums and teeth and on the surface of the "hard tissue" in the oral cavity. Bleeding gums are caused by the presence of tartar, dental plaque and cavities. Dental caries can increase VSC levels caused by spoilage of food residues by bacteria in caries it will cause halitosis.<sup>34</sup>

The results of the study entitled The influence of behaviour and level of knowledge about oral dental hygiene on the occurrence of halitosis in students. The study with 20 respondents based on the level of knowledge found that most respondents (85%) had knowledge the awareness of maintaining dental and oral hygiene to prevent halitosis. Halitosis based on the level of dental and oral hygiene found that more than half of the respondents (55%) had OHI-S with a moderate category.<sup>35</sup> This research is supported by other studies on Halitosis. The clinical causes of halitosis are poor OHI-S such as poor oral hygiene, debris, extensive caries, poor restoration and low salivary flow. OHI-S greatly affects the increased levels of VSC in a person's oral cavity. The condition causes the number of bacterial cells to increase and produces an unpleasant odour.<sup>14</sup>

The research entitled Assessment of the results of training to recognize the causes of halitosis and its prevention by maintaining oral dental health in residents of the French Walk apartment, North Jakarta. Obtained results from the statements of training participants on the causes of halitosis derived from tobacco, food, dry mouth, dental hygiene and systemic diseases, methods of prevention by brushing your teeth, and methods of dealing with them using mouthwashes. Based on the data obtained, the knowledge of the total value of the problem given from the pre-test obtained an average score of 79.04. However, after training, respondents obtained an average score of 94.75. Thus, in this study, there was a more significant increase in the knowledge of citizens about halitosis.<sup>26</sup> This research is in line with Arisman's theory (2009)

with the title Nutrition in the Life Cycle. Explains that good brushing is effective to prevent the onset of dental caries that can cause bad breath.<sup>36</sup> and also a study entitled Oral malodor-A cause or disease in humans which explains that mouthwash is used as a chemical approach with components such as cetylpyridinium chloride (CPC) can combat bad breath.<sup>24</sup>

The results of the study on the level of knowledge of patients who visited the Rantau prapat Health Center on halitosis with a total of 102 respondents showed that some respondents (46.1%) had a good level of knowledge of the aetiology of halitosis. The main causes of halitosis are bacteria and VSCs, and the average cause of halitosis due to poor oral hygiene. Respondents in this study quite recognized that halitosis can come from extraoral, which is a systemic disease that includes diabetes mellitus, kidney disorders, respiratory diseases, digestive disorders, blood disorders and others.<sup>37</sup> This study is in line with the study entitled The effect of alcoholic and non-alcoholic mouthwashes on changes in the female oral environment. Halitosis of extra-oral origin can be identified, including ENT disorders, systemic diseases such as diabetes or kidney disease, metabolic or hormonal changes as well as lungs. This systemic disease can cause halitosis due to the presence of bacteria that settle on the oral mucosa.<sup>4</sup>

### CONCLUSION AND RECOMMENDATION

The level of public knowledge about the causes and treatment of halitosis is still relatively sufficient on average. People know that bad breath comes from poor oral hygiene, smoking, alcoholic beverages, pungent foods and systemic diseases such as kidney disease. The level of public knowledge about halitosis falls into the category of quite good. People know that halitosis is a poor oral health condition characterized by an unpleasant breath odour. People also know that brushing their teeth regularly with the right techniques and using mouthwash after brushing their teeth can overcome halitosis.

Based on the conclusions above, the suggestions that can be submitted are that it is hoped that the public can increase additional knowledge about the causes and treatment of halitosis by participating in health counselling and increasing knowledge through all types of information media.

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