

## Halitosis in Elderly (A Pilot Study in Tresna Werdha Melania Nursing Home)

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### ABSTRACT

**BACKGROUND:** Elderly is a person who has reached the age of more than 60 years old. Elderly generally experiences a decreased in oral hygiene, number of teeth, mucosal sensitivity of the oral cavity and xerostomia. Xerostomia can cause the decreased in oral hygiene and cause an increase in bad breath (halitosis).

**OBJECTIVES:** The purpose of this study is to provide information about halitosis score in elderly.

**METHODS:** This was descriptive research with cross sectional approach. The numbers of subject were 30 and obtained by quota sampling. Data collection was done by anamnesis and by measuring halitosis score, using Tanita breath checker. Tanita breath checker is an innovative palm-sized monitor that able to detect and measure the presence of volatile sulfur compound (VSC) by displaying the level of halitosis.

**RESULTS:** Distribution of halitosis frequency in elderly based on gender were more female than male. Distribution of halitosis frequency in elderly based on halitosis score showed that there were fourteen subjects with a halimeter score of 2 while other scores were less than fourteen subjects. Halitosis frequency distribution based on anamnesis, subjects who had bad breath complaints were more than those who did not have bad breath. **Conclusions:** Based on the results, it can be concluded that halitosis in elderly were caused by many factors, such as dental caries and the habit of the subject who liked to eat smelly foods.

**KEYWORDS:** Elderly; Halitosis.

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### INTRODUCTION

Elderly is an advanced stage of a person's life and is a natural process. Individuals who have reached the age of 60 years and over are included in the elderly. The elderly often suffer from various diseases that generally occur due to decreased organ function.<sup>1,2,3</sup>

Basic Health Research in 2013 states that dental and oral problems are one of the most common diseases in the elderly. Poor oral hygiene can cause problems for the elderly. Poor oral hygiene in the elderly can increase the risk of oral diseases such as dental caries, periodontal disease, and halitosis.<sup>1,4,5</sup>

Halitosis (bad breath, fetor ex ore, fetor oris) is an oral health condition characterized by unpleasant odors emanating consistently from the oral cavity.<sup>4</sup> Halitosis is caused by volatile sulfur compound (VSC). VSC is a result of the production of bacteria's activity in the oral cavity.<sup>6,7</sup> Halitosis comes from Latin, "halitus" which means breath and "osis" which means an abnormal condition.<sup>8</sup> Therefore, the purpose of this study is to provide information about distribution of halitosis frequency in elderly, as a pilot study in Tresna Werdha Melania Nursing Home.

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## MATERIALS AND METHODS

This was descriptive research with cross sectional approach. The numbers of subject were 30 and obtained by quota sampling. Data collection was done by anamnesis and by measuring halitosis score, using Tanita breath checker.

Tanita breath checker is an innovative palm-sized monitor that can detect and measure the presence of volatile sulfur

compound (VSC) by displaying the level of halitosis. The six levels of halitosis score are: no odor, slight odor, moderate odor, heavy odor, strong odor and intense odor (Table 1).

**Table 1. Organoleptic measuremen. <sup>6</sup>**

Halitosis score	Levels of halitosis
0	no odor
1	slight odor
2	moderate odor
3	heavy odor
4	strong odor
5	intense odor

## RESULT AND DISCUSSION

There were 30 subjects recruited in this study. The average age was 60-74 years with good general health.

The results of this study were:

**Table 2. Subjects with halitosis in elderly based on gender**

Gender	Frequency	%
Male	2	7
Female	28	93
<b>Total</b>	<b>30</b>	<b>100</b>

Table 2 showed subjects with halitosis in elderly based on gender. It appears that from 30

subjects, 28 were female (93%), while male subjects were only 2 (7%).

**Table 3. Distribution of halitosis frequency in elderly based on halitosis score**

Halitosis score	Frequency	%
0	0	0
1	1	3
2	14	47
3	11	37
4	2	6.50
5	2	6.50
<b>Total</b>	<b>30</b>	<b>100</b>

Table 3 showed that there is one subject in a nursing home with a halitosis score of 1 or bad breath that is difficult to detect. Fourteen subjects scored a halitosis of 2 or moderate odor. Eleven subjects had a halitosis score of 3 or moderate

bad breath. Two subjects had a halitosis score of 4 or strong bad breath. The remaining two subjects had a halitosis score of 5 or very bad breath.

**Table 4. Distribution of halitosis frequency in elderly based on anamnesis**

Question	Frequency	%

1	<b>Complaints of bad breath</b>		
	Yes	17	57
	No	13	43
2	<b>Brush Teeth Regularly</b>		
	Yes	24	80
	No	6	20
3	<b>Use Dentures</b>		
	Yes	4	13
	No	24	87
4	<b>Have cavities</b>		
	Yes	19	63
	No	11	37
5	<b>Eat Smelly Foods</b>		
	Yes	20	67
	No	10	33

Table 4 showed distribution of halitosis frequency in elderly based on anamnesis. From the table it appears that subjects who complained of bad breath were more than those who did not. Subjects who brushed their teeth regularly were more than those who did not. Subjects who did not use dentures were more than those who did. More subjects had cavities than did not and more subjects who liked to eat smelly food than those who did not.

The results of this research on halitosis in elderly are in accordance with the research of M. Ziller et al. in 2016. This study showed that the elderly had a high halitosis score. M. Ziller's research was conducted on 124 subjects who were in social care institutions in Gothenburg, Sweden. 54% of the subjects had a score of 2, which means that there was bad breath and the study also used anamnesis to ask the subject several things. In that study, 62% of the subjects claimed to have bad breath. In M. Ziller's study, it was found that bad breath was associated with xerostomia, calculus, periodontal disease, and the use of dentures. <sup>4</sup>

Another study conducted by N. Nidayawati et al. in 2012 explained the description of the level of knowledge of oral hygiene in elderly in East Tomohon District. This study shows that the knowledge of elderly about oral health is very low. It is different from the results of this study. The research that has been conducted shows that the subjects have a good level of knowledge about how to maintain dental and oral hygiene, because 80% of the subjects regularly brush their teeth.

Based on the results of this study, it can be concluded that the distribution of halitosis frequency in the elderly in Tresna Werdha Melania Nursing Home has a fairly high score. This is because most of the subjects suffered from dental caries and had a habit of eating smelly foods, even though the subjects claimed to have a good knowledge of how to maintain oral hygiene by brushing their teeth regularly.

#### CONCLUSION AND SUGGESTIONS

Based on the results of the study on halitosis in elderly in social institutions, it can be concluded that the elderly have halitosis caused by many factors. Subjects who complained of bad breath were more than those who did not. Some of the factors that cause halitosis in the elderly include dental caries and the habit of subjects who like to eat smelly foods. It is hoped that other studies will be carried out, so that further information can be obtained about halitosis in elderly. It is recommended that the elderly can maintain oral hygiene to prevent halitosis.

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