

## Knowledge Level of Elderly in South Tangerang in Utilizing Mouthwash to Maintain Dental and Oral Health

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### ABSTRACT

**Background:** Elderly (elderly) is an advanced stage of a person's life and is a natural process that cannot be avoided by every individual. Basic Health Research in 2013 states that oral and dental problems are one of the most common diseases suffered by the elderly. Poor oral hygiene in the elderly can increase the risk of oral diseases such as dental caries, periodontal disease and halitosis.

**Objective:** This study aims to explain the level of knowledge of the elderly in South Tangerang in utilizing mouthwash to maintain oral health.

**Method:** This type of research is descriptive, with a cross-sectional research design. The number of subjects was determined using the total sample, snowball method. Questionnaires were distributed to respondents in the form of a google form.

**Results:** The results of this research can be seen through tables and figures based on the answers to the questionnaire given to elderly respondents.

**Conclusion:** Knowledge level of the elderly in South Tangerang in utilizing mouthwash to maintain oral health is in the good category. This can be seen from the answers to the questionnaires that have been distributed in the form of google forms. The elderly are quite aware that the condition of bad breath (halitosis) can be overcome by using mouthwash.

**KEYWORD:** Elderly, mouthwash, teeth, mouth.

### ARTICLE DETAILS

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### INTRODUCTION

The stomatognathic system is the functional unit of the body responsible for coordinating speech, swallowing and mastication. The stomatognathic system will be disrupted by dental abnormalities. <sup>1</sup> Health professionals are concerned about the public's understanding of the importance of oral and dental examinations. <sup>2</sup> Oral diseases are currently ranked 8th out of the top ten outpatient diseases. <sup>3</sup> The prevalence of caries in developing countries is still quite high. Caries can cause discomfort to the patient, and lead to pain in the tooth. <sup>4</sup>

Elderly is the advanced stage of a person's life and is a natural process that cannot be avoided by every individual. <sup>5,6,7</sup> Poor oral hygiene in the elderly can increase the risk of oral diseases such as dental caries, periodontal disease and

halitosis. <sup>5</sup> Poor oral hygiene can be caused by the growth of pathogenic bacteria. Mouthwash is a solution or liquid that can be used to eliminate pathogenic bacteria, thus preventing halitosis and dental caries. Therefore, mouthwash can be an alternative in maintaining oral health in the elderly. <sup>8,9,10,11</sup> Elderly is the final stage of development in the human life cycle. Elderly occurs naturally and cannot be avoided by every individual. <sup>6</sup>

According to the World Health Organization (WHO, 2013), the criteria for the elderly include middle age, namely the age group 45-54 years, elderly (elderly), namely the age group 55-65 years, young old (young old), namely the age group 66-74 years, old (old), namely the age group 75-90 years, and very old (very old), namely the age group above 90 years. <sup>12,13</sup> World Population Ageing data shows that the

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number of elderly people overall in 2019 was more than 703 million. The number of elderly people in 2019 in Indonesia reached 9.60% or around 25.64 million elderly people.<sup>9</sup> The increasing number of elderly people in Indonesia will certainly cause various problems and problems that will arise both physically and psychosocially.<sup>6</sup> The body of an elderly person is easily vulnerable, therefore proper management is needed in maintaining the health of an elderly person.<sup>9</sup>

Mouthwash is commonly used to keep your breath fresh, prevent oral diseases such as caries and gingivitis and reduce plaque formation. Various types of mouthwash are available in the market with different active ingredients. Some of the main ingredients found in mouthwash include chlorhexidine gluconate, benzydamine hydrochloride, cetylpyridinium chloride, sodium benzoate, triclosan, hydrogen peroxide, povidone-iodine, fluoride, sodium bicarbonate, essential oils and ethanol. Based on its composition, mouthwash can be divided into three types,

namely herbal mouthwash, alcohol-free mouthwash and alcoholic mouthwash.<sup>14</sup>

Based on the description above, the researcher's interest arose to conduct a study with the title "The Level of Knowledge of the Elderly in South Tangerang in Utilizing Mouthwash to Maintain Dental and Oral Health."

### METHODS

The type of research conducted was descriptive, with a research design cross-sectional. This research was conducted from June to December 2024. The study population was elderly people and filling out questionnaires in the form of google forms. Determination of the number of subjects is determined by the total sample, snowball method. Data management and analysis that was first carried out was data entry, then descriptive analysis was carried out which was presented in tabular form.

### RESULT

The results in this study can be seen in the following table:

**Table 1. Distribution of Respondents Based on Gender**

Gender	Frequency	Percentage (%)
Female	35	79,5
Male	9	20,5
<b>Total</b>	<b>44</b>	<b>100</b>

**Table 2. Distribution of Respondents Based on Age**

Age (year)	Frequency	Percentage (%)
55-65	30	68,2
66-74	14	31,8
75-90	0	0
>90	0	0
<b>Total</b>	<b>44</b>	<b>100</b>

**Table 3. Distribution of Respondents Based on Education**

Education	Frequency	Percentage (%)
Junior high school	0	0
High school	1	2,3
Bachelor's degree	37	84,1
Master's degree	5	11,4
Doctoral degree	0	0
Others	1	2,3
<b>Total</b>	<b>44</b>	<b>100</b>

**Table 4. Distribution of Respondents Based on Employment Status**

Employment Status	Frequency	Percentage (%)
Still working	7	15,9
No longer working / Retired	37	84,1
<b>Total</b>	<b>44</b>	<b>100</b>

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**Table 5. Distribution of Respondents Based on How to Get Information about Mouthwas**

Information from	Frequency	Percentage (%)
Doctor/Dentist	17	38,6
Family/friends	0	0
Media (Television/Internet/Brochures)	27	61,4
<b>Total</b>	<b>44</b>	<b>100</b>

**Table 6. Distribution of Respondents Based on The Key Benefits of Mouthwash**

Benefits of Mouthwash	Frequency	Percentage (%)
Clears away food debris	0	0
Reduces bacteria in the mouth	3	6,8
Freshens breath	20	45,5
Resolves gum disease	0	0
Reduces bad breath	21	47,7
Reduces the risk of cavities	0	0
<b>Total</b>	<b>44</b>	<b>100</b>

**Table 7. Distribution of Respondents Based on Using Mouthwash as Prescribed by a Dentist**

Prescribed by a Dentist	Frequency	Percentage (%)
Yes	8	18,2
No	36	81,8
<b>Total</b>	<b>41</b>	<b>100</b>

**Table 8. Distribution of Respondents Based on Getting Enough Information on the Correct Use of Mouthwash**

Getting Enough Information	Frequency	Percentage (%)
Yes	8	18,2
No	36	81,8
<b>Total</b>	<b>41</b>	<b>100</b>

**Table 9. Distribution of Respondents Based on Knowledge that Excessive Use of Mouthwash Can Have Side Effects**

Excessive Use of Mouthwash Can Have Side Effects	Frequency	Percentage (%)
Yes	3	6,8
No	41	93,2
<b>Total</b>	<b>44</b>	<b>100</b>

**Table 10. Distribution of Respondents Based on Ever Experienced Bad Breath**

Ever Experienced Bad Breath	Frequency	Percentage (%)
Yes	43	97,7
No	1	2,3
<b>Total</b>	<b>44</b>	<b>100</b>

**Table 11. Distribution of Respondents Based on Based on Based on knowing that there are 3 Kinds of Mouthwash Variants**

Knowing about 3 kinds of Mouthwash	Frequency	Percentage (%)
Yes	2	4,5
No	42	95,5
<b>Total</b>	<b>44</b>	<b>100</b>

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**Table 12. Distribution of Respondents Based on Types of Mouthwash that are Often Used**

Mouthwash that are Often Used	Frequency	Percentage (%)
Herbal	37	84,1
Non-Alcoholic	7	15,9
Alcohol	0	0
<b>Total</b>	<b>44</b>	<b>100</b>

**Table 13. Distribution of Respondents Based on Read the Instructions on How to Use Mouthwash**

Read the Instructions	Frequency	Percentage (%)
Yes, always	30	68,2
Sometimes	13	29,5
Never	1	2,3
<b>Total</b>	<b>44</b>	<b>100</b>

**Table 14. Distribution of Respondents Based on Using Mouthwash Daily**

Using Mouthwash Daily	Frequency	Percentage (%)
Yes	17	38,6
No	27	61,4
<b>Total</b>	<b>44</b>	<b>100</b>

**Table 15 Distribution of Respondents Based on Main Ingredients of Herbal Mouthwash that Have Been Used**

Main Ingredients of Herbal Mouthwash	Frequency	Percentage (%)
Betel leaf	38	88,4
Saga leaf	0	0
Sweet root	0	0
Basil leaf	0	0
Tea tree oil	4	9,3
Green tea	1	2,3
<b>Total</b>	<b>43</b>	<b>100</b>

**Table 16 Distribution of Respondents Based on Main Ingredients of Non-Alcoholic Mouthwash that Have Been Used**

Non-Alcoholic Mouthwash	Frequency	Percentage (%)
Chlorhexidine Gluconate (CHX)	5	11,6
Cetylpyridinium chloride (CPC)	0	0
Povidone-iodine (PVP-I)	21	48,8
Fluoride	1	2,3
Not knowing the main ingredients	16	37,2
<b>Total</b>	<b>43</b>	<b>100</b>

### DISCUSSION

Based on World Population Ageing data in 2019 there were more than 703 million elderly people globally. The number of elderly people in Indonesia in 2019 reached 9.60% or around 25.64 million people. Indonesia will experience a tremendous increase in the number of elderly populations, by 2025 it is projected to be 414%, the largest in the world. This encourages us all to be prepared to face it, namely in dealing with the logical consequences of the various problems that

arise, along with this explosion of the elderly population.<sup>15</sup> The body will be increasingly vulnerable as it ages. The elderly will experience health problems due to decreased organ function so that the elderly must have proper management in maintaining dental, oral and body health.<sup>9</sup>

Generally, everyone will experience the process of growing old and old age is the last period of human life. During this period a person experiences physical, mental, and social decline to the point of not doing their daily tasks

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anymore and for most people old age is less fun. Teeth have functions for mastication, speech, and aesthetics. Many teeth in the elderly may have been damaged, even dislodged, making it difficult to chew food. The reduced ability to digest food due to tooth decay or toothlessness is one of the factors that affect the nutritional needs of the elderly. Tooth loss in the elderly has an impact on various issues, including psychological impacts such as feeling embarrassed, tense, losing appetite, malnutrition, disturbed sleep, difficulty socializing, avoiding going out, not having friends, disturbed concentration, and being unable to work completely.<sup>15</sup>

Dental health is one aspect of a person's health that is the result of the interaction of physical, mental, and social conditions. Tooth loss is the most common cause of decreased masticatory function. Tooth loss can also affect the oral cavity and general health so that it will affect a person's overall quality of life. Tooth loss can be caused by various things. The most common cause of tooth loss is due to poor oral health status, especially caries and periodontal disease.<sup>15</sup>

The elderly experience decreased oral hygiene, reduced number of teeth, decreased sensitivity of the oral mucosa, and xerostomia. Xerostomia can cause a decrease in oral hygiene and result in an increase in bad breath (halitosis). One of the halitosis therapies that can be done is by using mouthwash.<sup>16</sup>

Elderly knowledge about oral health is one of the important factors that influence oral hygiene and health. Knowledge is a factor that shapes a person's behavior. Health behavior is something related to individual actions in maintaining and improving health. According to Blum's theory, behavior is one of the important factors that determine oral health.<sup>17</sup>

Data processing in this study was obtained from the results of filling out a questionnaire distributed using google form. Based on the research findings from a total of 44 respondents, women constituted the majority of respondents, namely 35 (79.5%). The fact is that there are more elderly women than men.<sup>18</sup>

Most respondents in this study were aged 55-64 years with 30 (68.2%). The remaining respondents were aged 66-74 years with 14 (31.8%). According to the World Health Organization (WHO, 2013), the classification of the elderly is as follows: 1) Elderly (elderly), namely the age group 55-65 years. 2) Young old, namely the age group 66-74 years. 3) Elderly (old), which is the age group 75-90 years and 4) Very old (very old), which is the age group of more than 90 years.<sup>19</sup>

The findings of this study showed that 37 (84.1%) respondents had a bachelor's degree (S1) which was the educational level with the most subjects. Elderly people who rarely do dental and oral examinations can cause oral disorders in the elderly, including tooth loss. It can be seen that the level of education of the elderly is very influential. The higher the level of education achieved by the elderly, the

greater the awareness of the importance of maintaining oral health.<sup>20</sup>

Many respondents in this study are retired considering that they are no longer productive, namely 37 (84.1%). However, 7 (15.9%) respondents were still actively working. Some steps for the elderly to live healthy include creating a good diet and strengthening the immune system, of course by eating nutritious food.<sup>15</sup>

All 44 (100%) respondents had heard about mouthwash. The information obtained about mouthwash was obtained by 27 (61.4%) respondents from the media (TV/internet, brochures). The rest learned about mouthwash from their doctor/dentist.

The main benefit of mouthwash according to most respondents was to reduce bad breath, as many as 21 (47.7%). The rest of the respondents thought that mouthwash was to freshen breath and reduce bacteria in the mouth. Mouthwash is generally used to keep breath fresh, prevent oral diseases, such as caries and gingivitis and reduce plaque formation.<sup>14</sup>

Respondents who used mouthwash based on a dentist's prescription were 8 (18.2%). While the rest bought mouthwash not based on a prescription from a dentist. The knowledge of respondents who received sufficient information regarding the correct use of mouthwash was only 8 (18.2%). While 36 respondents (81.8%) admitted that they did not get enough information.

Respondents' knowledge about the side effects of excessive mouthwash use was only 3 respondents (6.8%). While the remaining 41 (93.2%) claimed not to know about it. Excessive use of mouthwash can cause burning sensation, oral pain and tooth discoloration, among others.<sup>14</sup>

Bad breath (halitosis) has been felt by most respondents, as many as 43 (97.7%). Poor oral hygiene in the elderly increases the occurrence of caries, periodontal disease and halitosis.<sup>5</sup>

Respondents who knew that mouthwash consists of 3 types were only 2 (4.5%). The majority of respondents 42 (95.5%) did not know about it. Mouthwash consists of 3 types, namely herbal, non-alcoholic and alcoholic mouthwash. The type of mouthwash that was mostly used by respondents was herbal mouthwash, as many as 37 (84.1%). Herbal extracts are proven to have various side effects associated with conventional medicine and are a safe and effective alternative to conventional medicine that is currently developing.<sup>14</sup>

The majority of respondents always read the instructions for using mouthwash on the packaging, 30 (68.2%). Respondents who used mouthwash every day were 17 (38.6%). The rest did not use mouthwash every day.

Based on the findings of 43 respondents, betel leaf was the most commonly used type of herbal mouthwash, as many as 38 (88.4%). The content of non-alcoholic mouthwash that is widely used by respondents is Povidone-iodine (PVP-I), as many as 21 (48.8%).

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The findings of this study can be utilized as data and information regarding the level of knowledge of the elderly in South Tangerang in utilizing mouthwash to maintain oral health. Data and information can be the basis for creating optimal oral health initiatives for the elderly community.

### CONCLUSIONS

The conclusion of the results of this study is that the level of knowledge of the elderly in South Tangerang in utilizing mouthwash to maintain oral health is in the good category. This can be seen from the answers to the questionnaires that have been distributed in the form of google forms. The elderly are quite aware that the condition of bad breath (halitosis) that they feel can be overcome by using mouthwash.

Suggestions from this study are to further improve oral health promotion in the elderly, in order to increase the knowledge of the elderly about the use of mouthwash. It is recommended that the elderly utilize mouthwash under the supervision of a dentist. This is to prevent excessive use of mouthwash.

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