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## Relationship Of Brushing Teeth Skills With Debris Index In The Older Adults At Tambak Wedi Baru Surabaya

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### ABSTRACT

The proportion of Indonesians who have dental and oral problems at the age of 55-64 years is 61.9% and the age of >65 years is 54.2%. As well as the proportion of daily brushing behaviour, namely 94.7% and 2.8% have brushed their teeth twice a day. **The problem of** this study is the high prevalence of debris index in older adults in Tambak Wedi Baru Surabaya. **The purpose of** the study was to find out the relationship between of knowledge how to brush teeth and debris index in the older adults at Tambak Wedi Baru Surabaya. **The type of research** is cross-sectional with the number of respondents being 50 older adults. **Research method by** filling out observation sheets. **The data analysis technique** used is by tapping the results of data that has been collected and presented in the form of tables. **The results** showed that there is a relationship between knowing how to brush teeth with dental hygiene in older adults.

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### INTRODUCTION

The elderly's knowledge of oral and dental health is one of the important factors that affect dental health of the elderly. The level of knowledge can be influenced by educational status, socioeconomic status, and family participation. Knowledge can be a cognitive domain that is essential for the formation of actions<sup>10</sup>.

The elderly are synonymous with decreased endurance and experiencing various kinds of problems in their health. Health problems, especially dental and oral health in the elderly, tend to be very bad and pay less attention. Many elderly people no longer pay attention to and maintain good dental and oral hygiene due to impaired physical health. So that in elderly conditions there is usually a decrease in the level of dental and oral hygiene and also a decrease in dentition which results in tooth loss<sup>9</sup>.

Dental and oral health in the elderly is a very important role because it is closely related to general health in the elderly. One of the conditions that often occur in the oral cavity of the elderly is tooth loss. Most tooth loss can be caused as a result of poor dental and oral health status, especially dental caries<sup>20</sup>.

Dental and oral problems can occur due to the lack of maintaining dental and oral hygiene for example caries or holes in the teeth that can hit anyone without knowing their age. Assessment of oral hygiene in a community can be measured using oral hygiene index simplified (OHI-S)

Dental and oral problems can occur due to the lack of maintaining dental and oral hygiene for example caries or holes in the teeth that can hit anyone without knowing their age. Assessment of oral hygiene in a community can be measured using oral hygiene index simplified (OHI-S) which is a combination of

debris index simplified (DI-S) and calculus index simplified (CI-S) assessments<sup>23</sup>.

The easiest way to do this is to maintain cleanliness and healthy teeth and mouth by brushing your teeth. Good and correct brushing behaviour is done diligently, meticulously, and regularly. Brushing is an important routine in maintaining and maintaining healthy teeth from bacteria and food debris attached to using a toothbrush. Brushing is an effort made to keep teeth clean and healthy<sup>17</sup>.

The results of Basic Health Research (2018) stated that for the Indonesian population who have dental and oral problems the proportion 55-64 years old is 61.9% and the age >65 years is 54.2%. As well as the proportion of brushing behaviour every day, namely 94.7% and 2.8% have brushed their teeth twice a day, namely morning and night correctly.

The results of the examination on the elderly at Tambak Wedi Baru Surabaya, it is known that the average debris index number with a bad category (2.26), then the problem in this study is the High Debris Index in the Elderly in Tambak Wedi Baru Surabaya.

## **METHOD**

This type of research is analytical with a cross-sectional design. The sample in the study was all elderly in Tambak Wedi Baru Surabaya.

In this study, using a random sampling technique with the purposive sampling method, a total of 50 were obtained. The research location used was Tambak Wedi Baru Surabaya. The method of collecting data on the skills of how to brush your teeth with a checklist sheet. Instrument collection of data on index debris by using direct inspection. The purpose of this study is to measure the skills how to brush teeth in the elderly in Tambak Wedi Baru Surabaya, measure the debris index in the elderly in Tambak Wedi Baru Surabaya, analyze the relationship of skills how to brush teeth to debris index in the elderly in Tambak Wedi Baru Surabaya. Data analysis techniques used using the Chi-Square test

## **RESULTS**

Frequency Distribution Table of Sex Characteristics of the Elderly in Tambak Wedi Baru Surabaya

No	Jenis Kelamin	Frekuensi	Persentase
1	Man	38	76%
2	Woman	12	24%
Total		50	100%

Based on table 5.1, it is known that the frequency distribution of elderly sex characteristics in Tambak Wedi Baru Surabaya is more men, namely 38 people (76%) than women with a total of 12 (24%).

**Frequency Distribution Table of Elderly Age Characteristics in Tambak Wedi Baru Surabaya**

No.	Umur	Frekuensi	Persentase
1.	60-64	25	50%
2.	65-69	20	40%
3.	70-74	5	10%
Total		50	100%

Based on table 5.2, it is known that the frequency distribution of elderly age characteristics in Tambak Wedi Baru Surabaya is more aged 60-64, namely 25 people (50%), for ages 65-59 which is 20 (40%), and aged 70-74 with a number of 5 (10%).

Table of Skill Recapitulation Results from All Brushing Skills Statements in the Elderly in Tambak Wedi Baru Surabaya

No	Statement	Benar		Salah		Kriteria Penilaian
		f	%	f	%	
1	Brushing the teeth of the front upper and lower jaw with an up-and-down movement from the direction of the gums towards the growth of the teeth	7	14%	43	86%	Tidak terampil = 0%, kurang terampil = 1-25%, Cukup terampil = 26-50%, Terampil = 51- 75%, Sangat Terampil = 76-100% (Kementerian Pendidikan dan Kebudayaan, 2017).
2	Brushing the surface of the teeth facing the right and left cheeks in a circular motion	26	52%	24	48%	
3	Brushing the teeth of the right-left upper and lower jaw on the chewing part of the teeth with back and forth movements	<b>48</b>	<b>96%</b>	2	4%	
4	Brushing the teeth of the front teeth of the upper jaw facing the ceiling with a prying brush movement out of the oral cavity	3	6%	<b>47</b>	<b>94%</b>	
5	Brushing the teeth of the back teeth of the lower jaw facing the tongue in an outward prying motion	11	22%	39	78%	
6	Brushing on the surface of the tongue	7	14%	43	86%	
Total		204%		396		<b>Cukup Terampil</b>
Average		<b>34</b>		66		

Based on table 5.3, most respondents found that the skill of brushing the teeth of the right and left lower jaw on the chewing part of the teeth with a back and forth movements answered correctly as many as 48 (96%), this is included in the category of highly skilled. For brushing skills, the front tooth surface of the upper jaw facing the ceiling with a prying brush movement out of the oral cavity most respondents answered incorrectly by 47 (94%) in the less skilled category.

**Table 5.4 Results of Index Debris Data Collection in the Elderly in Tambak Wedi Baru Surabaya**

Index Debris Criteria	Frekuensi	Persentase	Debris Indeks Score
Good	9	18%	3,67
Moderat	14	28%	19,64
Poor	27	54%	65,13
<b>Total</b>	<b>50</b>	<b>100%</b>	<b>1,77</b>
			<b>Sedang</b>

Based on Table 5.4, it is known that the results of collecting index debris data, the average in the bad category is 65.13 (54%), in the medium category the figure is obtained 19.64 (28%) and in the good category is obtained with a figure of 3.67 (18%).

**Table 5.5 Results of Analysis of the Relationship between Brushing Skills and Index Debris in the Elderly in Tambak Wedi Baru Surabaya Table**

Elderly Brushing Skills	Debris Indeks			Total	P Value
	ood	oderate	oor		
Less Skilled		0		5	<b>0,011</b>
Skill enought		8		20	
Skilled		8		16	
Highly Skilled		1		9	
Total	3	17	0	50	

Based on Table 5.5, it is known that the results of SPSS calculations using the Chi-Square data analysis technique obtained a p-value of 0.011 which means it is smaller than the significant value ( $\alpha$ ) set, namely 0.05 ( $0.000 < 0.05$ ), so that H2 is rejected and H1 is accepted, it can be concluded that there is a relationship between brushing skills and index debris in the elderly in Tambak Wedi Baru Surabaya.

## DISCUSSION

Based on the results of the data analysis that has been carried out, it can be seen that most of the brushing skills in the elderly are in the

category of quite skilled. This is because some respondents already know the statement of brushing skills, especially in brushing the teeth of the right and left upper and lower jaws on the chewing part of the teeth with back and forth movements. And also in the statement of brushing the teeth on the surface of the teeth facing the right and left cheeks in a circular motion, some respondents already know well. According to the results of Morita's research (2021), that most of the elderly are aware of the health of the oral dental cavity affecting the health of the body.

Knowledge about proper brushing still needs to be improved because it is obtained Many respondents from the evaluation results, morning and evening toothbrush activities, who know the tongue does not need to be brushed when brushing their teeth, and the lack of knowledge of the elderly about checking with the dentist is carried out regularly at least once every 6 months. If the elderly have good knowledge and are able to understand in brushing their teeth properly and correctly there is no knowledge of the elderly who are still in the unskilled category. This is in line with the research of Ali et al. (2016), which states that learning how to brush teeth continuously will change a person's behaviour, the attitude of action and skills. According to Notoatmojo (2018), the improvement of brushing skills is due to information through health education. Health education is essentially an activity or effort to convey a health message to the community, group or individual, in the hope that with the message, the community, group or individual can gain better knowledge about health. So it is hoped that this knowledge can affect his behaviour. According to research by Suratri *et al.* (2016), it was found that it is not enough if you only have good knowledge and attitudes in maintaining dental health because it is also necessary to balance the knowledge and attitudes of the closest people you already have with the implementation to form behaviours to maintain good dental health as well. Knowledge and attitudes are closed behaviours that are still very limited in the form of perception, feelings and attention. Meanwhile, actions are open behaviours that have been carried out or have been practised to realize an action, supporting factors such as facilities and infrastructure are needed. In order to improve the status of dental and oral hygiene, efforts are needed to maintain dental and oral health, one of which is brushing your teeth. The results of

research that have been carried out by Triana (2018), state that there is a significant relationship between brushing behaviour and dental and oral hygiene status.

Poor dental and oral hygiene is caused by the presence of debris and plaque that can lead to the onset of gingivitis and long-term exposure to plaque can lead to loss of periodontal attachment. Long-term exposure to plaque can also cause demineralization and destruction of teeth resulting in caries. Poor dental and oral hygiene can also lead to the presence of plaque and calculus. Plaque and the accumulation of bacteria contribute to the deterioration of oral health and cause periodontal disease (Sabilillah & Kristiani, 2017). According to (Tarigan 2016), says that Maintaining the cleanliness of the oral cavity should begin in the morning both before and after breakfast, Brushing your teeth will reduce the potential for erosion mechanisms on the surface of teeth that have been demineralized. Followed by maintaining healthy teeth and mouth at night before going to bed. Because when sleeping, salivary flow will decrease so that the buffer effect will be reduced, therefore all plaque must be cleaned followed by the administration of preventive drugs such as fluoride. According to (Princess et al. 2010), that The recommended length of brushing of teeth is a minimum of five minutes, but it is actually too long. Generally, people do a maximum of two minutes of tooth brushing.

It can be concluded that the skill of how to brush teeth for the elderly can affect the debris index. With good knowledge, the elderly should be able to practice well as well. It can certainly change habitual behavior, especially how to brush your teeth. So that the health status of the teeth and mouth, especially the debris index, can change. This is in line with previous primary data obtained by bad category index debris. With the knowledge gained, an index debris with a moderate category is obtained. Dental and oral health problems often occur in the elderly, therefore with good knowledge, dental and oral health problems in the elderly can be minimized.

#### **Debris Index Elderly**

Based on the results of the analysis of the data obtained, most of the index debris in the elderly is in the moderate category. This can happen because there is a combination of internal and external factors. These internal factors consist of physical and psychic factors, while these external factors consist of various factors such as

environmental behavior, heredity and health services. Based on H.L. Blum's theory in Notoatmojo (2018) also states that a person's dental health status or society can be influenced by four factors, namely heredity, environment (physical and socio-cultural), behavior and health services. Behavioral factors play an important role in influencing the health status of teeth and mouth. The health status of teeth and mouth can be measured, one of which is from the indicator of the prevalence of dental caries. Dental caries is caused by 4 main faktor namely host, microorganism, time and substrate (Marinda, 2017). According to Ermawati (2017), dental and oral hygiene for the elderly really needs to be considered, because the elderly are already vulnerable to various diseases, both diseases of the oral cavity and diseases in general. Therefore, dental and oral hygiene is one of the important parts to maintain the disease and its severity in the elderly. Based on the results of Ermawati's research (2017), it can be seen that almost the entire group of elderly people who have poor oral health have done teeth and mouth cleaning, and only a few elderly people do not / rarely brush their teeth. Nevertheless, the hygiene conditions of their teeth and mouth are still mostly poor. It can be concluded that many elderly people do not understand how to clean their teeth and mouth properly and correctly. This condition arises because the elderly do not understand how to clean their teeth and oral cavity. In addition, the decline in musculoskeletal function in the elderly is a very important factor in influencing the ability of the elderly to clean their teeth and oral cavity, so that abnormalities in the oral cavity are not increasingly diverse and complex.

The efforts that need to be made in maintaining the dental and oral hygiene of the elderly in the wider community, in general, are to implement clean and healthy living behaviour patterns. The way to maintain dental and oral hygiene in the elderly is to rinse your mouth and brush your teeth regularly even though you are toothless or have lost many teeth. It aims to maintain the condition of the gums and periodontal tissue to keep them healthy. In the elderly who have a lot of teeth, it is taught to brush their teeth twice a day after meals and before going to bed every day regularly. If you find cavities or brown or blackish spots, it is recommended to check your teeth with the nearest dentist or pukesmas. These efforts are what is needed for the elderly to maintain and

improve the quality of dental and oral health in the wider community (Ermawati, 2017).

### **The Relationship of Brushing Skills To Debris Index In The Elderly**

Based on the results of the study, it is known that there is a relationship between the skill of how to brush your teeth against the debris index in the elderly. With the skills possessed, skilled or not, it certainly affects the index debris numbers. Although the debris index number is high but the skill of how to brush teeth is good, it is necessary to understand the hygiene of teeth and mouth properly and correctly. Seniors who have good skills should be able to behave well about brushing their teeth, and of course the impact of this behavior is that the oral cavity becomes clean debris-free. This is in line with Notoatmojo's theory that the improvement of brushing skills is due to information through health education. Health education is essentially an activity or effort to convey a health message to the community, group or individual, in the hope that with the message, the community, group or individual can gain better knowledge about health. So it is hoped that this knowledge can affect his behavior.

According to Salamah (2020), saying that brushing your teeth is an effort made to keep your teeth clean and healthy. Teeth have roles including: Aesthetics (Teeth can shape our face, so they are very influential in determining a person's beauty and good looks), Destroying food, and helping in speaking. Many disadvantages caused by not brushing your teeth include: Teeth looking dirty and brownish yellow, bad breath increases, poor dental and oral health can affect appearance, so as to create an inferiority complex that will affect their social life and dental caries/tartar, and other diseases caused by bacteria that will cause discomfort.

### **CONCLUSION AND RECOMMENDATION**

Based on the research on the Relationship of Brushing Skills to Debris Index in the Elderly in Tambak Wedi Surabaya, it can be concluded that:

1. Skills on how to brush teeth in the elderly at Tambak Wedi Baru Surabaya are in the category of quite skilled.
2. Debris index in the elderly at Tambak Wedi Baru Surabaya in the medium category.

3. There is a relationship between the skill of how to brush your teeth against index debris in the elderly at Tambak Wedi Baru Surabaya.

### **Saran**

Berdasarkan hasil penelitian Hubungan Keterampilan Cara Menyikat Gigi Terhadap Debris Indeks Pada Lansia di Tambak Wedi Baru Kota Surabaya dan kesimpulan diatas dapat diberikan saran sebagai berikut:

1. Bagi Lansia di Tambak Wedi Baru Surabaya

Lansia di Tambak Wedi Baru Surabaya dapat meningkatkan keterampilan dalam menjaga kebersihan gigi dan mulut salah satunya dengan menyikat gigi yang baik dan benar dua kali sehari.

2. Bagi Peneliti Selanjutnya

Penelitian selanjutnya dapat meneliti dengan variable yang berbeda dan lebih banyak sehingga bisa menjadi bahan pertimbangan peningkatan keterampilan pada lansia selanjutnya.

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