

# Jurnal Kesehatan Gigi

p-ISSN: [2407-0866](#)e-ISSN: [2621-3664](#)<http://ejournal.poltekkes-smg.ac.id/ojs/index.php/jkg/index>

## The Tradition of Brushing Teeth with Betel Nut Peel with Abrasion Incidents in the Salele Community Tilomar Timor Leste Country

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### ABSTRACT

Salele Timor Leste people have long known betel leaf, betel nut, and lime as ingredients for betel or toothbrush. The behavior of brushing teeth with betel nut peel is one way to take care of teeth which was believed by the ancestors. There are positive and negative effects on dental health. From a positive point of view, it inhibits the process of caries formation, while the negative effects of brushing teeth with betel nut peel on the teeth and gums can cause discoloration of the teeth (stain), periodontal disease on the oral mucosa, lesions on the oral mucosa, poor oral hygiene, atrophy of the tongue mucosa and can cause abrasion. This research is an analytic observational study with a cross-sectional approach. The sample size used is 25 respondents with purposive sampling technique. The data were analyzed by univariate analysis (frequency distribution) and bivariate analysis (rank Spearman correlation test) to determine the relationship between the traditional habit of brushing teeth with betel nut peel on the incidence of abrasion. The results showed that there was a significant relationship between the tradition of brushing teeth with betel nut peel on the incidence of tooth abrasion. The frequency of brushing your teeth with betel nut peel more than twice a day can have bad effects on oral and dental health.

Keyword : brushing teeth; betel nut; abrasion.

### Introduction

Tradition is something that has been done long ago. Tradition has become part of the life of a group. The most important thing in a tradition is the existence of information passed down from generation to generation, both oral and written. People's behavior is often influenced by culture or habits that apply in the community itself. One of the cultural factors encountered in society is the habit of brushing teeth with betel nut peel.<sup>[1]</sup>

Brushing teeth is a behavior to control debris and plaque that is carried out to maintain dental and oral hygiene.<sup>[2]</sup> Brushing teeth with betel nut peel is a hereditary and entrenched activity with both positive and negative effects on dental health.

From the positive side, it inhibits the process of caries formation, while the negative effect of brushing teeth with betel nut on the teeth and gums can cause discoloration of the teeth (stain), periodontal disease on the oral mucosa, and lesions on the oral mucosa, poor *oral hygiene*, can cause atrophy of the tongue mucosa and can cause abrasion.<sup>[3]</sup>

Clinically, abrasion is an abnormal condition in the tooth layer, namely the enamel is lost and eroded or sometimes to a layer that is more than the enamel or dentin.<sup>[4]</sup> Tooth abrasion was mostly found in the cervical region forming a V-shaped cut at the root between the crown and the gum. When this happens, it can cause pain and soreness in the mouth which is very disturbing.<sup>[5]</sup>

The behavior of brushing teeth with betel nut peel in Salele Timor-Leste has no age limit so that this behavior is free to do. The belief about the efficacy of brushing teeth with betel nut peel for dental and oral health, makes people tend not to maintain good oral hygiene. There are many people who have discoloration of the teeth, plaque buildup and dental caries. The Salele people of Timor Leste have a belief that the skin of the betel nut used for brushing teeth is considered a form of friendship. Brushing your teeth with betel nut peel is believed to relieve toothache and can make teeth strong. This causes the behavior of brushing teeth with betel nut peel to increase, so that it has an impact on dental and oral health. Based on the results of a preliminary study conducted on the Salele community of Timor Leste, it was found that 75% of the people experienced tooth abrasion as a result of brushing their teeth using betel nut peel. This condition prompted researchers to further study about the relationship between the tradition of brushing teeth with betel nut peel on the incidence of tooth abrasion.

## Methods

The study was conducted on the Salele community of Timor-Leste in February 2022. This research is an analytic observational study with a *cross sectional approach*. The sample size used is 25 respondents with *purposive sampling* technique. The inclusion criteria used were aged 25-70 years as evidenced by a National Identity Card, not deaf or speech impaired, willing to be research respondents and willing to be examined.

The independent variable in this study is the traditional habit of brushing teeth with betel nut peel, while the dependent variable used is the incidence of abrasion. The study was conducted by examining the condition of the teeth and filling out questionnaires by respondents regarding the traditional habit of brushing teeth with betel nut peel. The data were analyzed by univariate analysis (frequency distribution) and bivariate analysis (rank Spearman correlation test) to determine the relationship between the traditional habit of brushing teeth with betel nut peel on the incidence of abrasion.

## Results and Discussion

**Table 1.**  
**Characteristics of Research Respondents**

Characteristics	F	%
<b>Gender</b>		
Man	4	24
Woman	19	76
Total	25	100
<b>Age</b>		
25-40	5	20
41-70	20	80
Total	25	100

**Table 2.**  
**Univariate Analysis of each Variable**

Variable	F	%
<b>Brushing Teeth with Betel nut peel</b>		
Sometimes	17	68
Often	8	32
Total	25	100
<b>Abrasion Incident</b>		
Little	10	40
Large	10	40
Very Large	5	20
Total	25	100

**Table 3.**  
**Results of Bivariate Analysis**

Variable	Abrasion Incident						Total	
	A little		Lots		A huge amount		F	%
	F	%	F	%	F	%		
Brushing Teeth with Betel nut peel								
Sometimes	9	36	6	24	2	8	17	68
Often	1	4	4	16	3	12	8	32
Total	10	40	10	40	5	20	25	100

p-value= 0.002.

Table 1 shows that the majority of respondents in this study were female as many as 19 (76%) respondents. Most of them are 41-70 years old, namely 20 (80%) respondents.

Based on table 2, most of the respondents in this study have the habit of brushing their teeth with the betel nut peel, "sometimes" category as many as 17 (68%) respondents. The respondents with "often" categories were 8 (32%) respondents. Most of the respondents experienced abrasion in "Little" category, namely 10 (40%) respondents, the "Large" category were 10 (40%) respondents and "Very Large" category was 5 (20%) respondents.

Table 3 shows that the variable of brushing teeth with betel nut peel and the incidence of tooth abrasion with p-value < 0.05, it can be interpreted that the tradition of brushing teeth with betel nut peel is related to the incidence of tooth abrasion. From table 4.3, it can be seen that most of the respondents with the habit of brushing their teeth with the betel nut peel "sometimes" category followed by "little" abrasion. Most of the respondents in the category "often" are also followed by the occurrence of "very large" abrasions.

In this study, it was found that the behavior of brushing teeth with betel nut peel is carried out almost every time and the behavior of brushing teeth with betel nut peel can be done by all ages. The behavior of brushing teeth with betel nut peel is carried out because of the belief inherited by the nobles. The benefits of brushing teeth with betel nut peel which are believed by the Salele people of Timor Leste are, can strengthen teeth, relieve toothache, make the body fresher, more confident, eliminate bad breath, and be able to relieve stress.

The results of statistical tests prove that brushing teeth with betel nut peel is associated with the incidence of abrasion. The frequency of brushing teeth with betel nut peel more than twice a day can have bad effects for dental and oral health. Frequency of brushing teeth with betel nut

peel repeatedly made respondents not maintain *oral hygiene* properly and resulted in the occurrence of abrasion, such as research conducted by Fatlolona (2013) on the periodontal health of the Papuan community in Manado. The majority had low oral hygiene due to poor *oral hygiene index* due to irritation of the substance used for brushing teeth repeatedly. This causes the occurrence of abrasion in respondents.<sup>[6]</sup> This is in line with research conducted by Marbun (2013) which mentions that the most betel is 6-10 years old, with the highest frequency of 1-3 times a day, the most widely used betel mixture is a mixture of betel, areca nut/betel nut, and lime. The main driving factor for betel nut is because of their own desires, where the purpose of chewing is mostly so that the teeth become strong and healthy. Of the 30 subjects, 29 people (96.66%) had lesions in their oral cavity. The lesion suspected of being Oral Submucous Fibrosis was 90% and the lesion suspected of being Bethel Chewers Mucosa was 6.66%.<sup>[7]</sup> The behavior of brushing teeth with betel nut peel carried out by the community tends not to compensate by brushing teeth because there is a habit of rubbing betel nut peels on the tooth surface. This habit is considered the same as brushing teeth because people believe that this habit can remove stains on the teeth and clean the rest of the betel nut that is found between the teeth.

Based on research conducted by Ginting (2020) that the frequency of betel nut has a relationship with the presence of lesions on the oral mucosa. Lesions on the oral mucosa are white sores on the edges of the mouth and tongue.<sup>[8]</sup> Based on research conducted by Marbun et al, (2013) on Papuan students in Manado that betel nut behavior is considered to prevent dental caries and strengthen teeth. The behavior of betel nut is considered a tradition because of the belief about the efficacy of betel nut for the oral cavity. This statement is in accordance with research conducted by Ginting (20-20) that the chewing behavior carried out by the Sentul community is due to the

belief in betel nut activities such as strengthening teeth, eliminating bad breath, and curing toothache. The behavior of betel nut peel is carried out almost all the time so that if the informant does not chew, the informant feels weak, less enthusiastic and sleepy. Based on research conducted by Agusta (2001), it was found that the most important ingredients of betel nut are tannins and alkaloids. Therefore In addition, consuming betel nut in excess can be harmful to health. This is because arecholine in betel nut can affect the presympathetic nerve by stimulating muscarinic and nicotinic receptors.<sup>[9]</sup>

### Conclusion

The conclusion of this research is that there was a significant relationship between the tradition of brushing teeth with betel nut peel on the incidence of tooth abrasion. The frequency of brushing your teeth with betel nut peel more than twice a day can have bad effects on oral and dental health.

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