



## Empowering Students in Improving Knowledge of Healthy Toothbrushing Techniques in The Use of The Tongue Scraper

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### ABSTRACT

Tongue cleaning is a simple and quick procedure that helps remove organisms and debris on the tongue. Tongue cleaning can be done using a tongue scraper. This research was conducted to determine the correlation between the OHI-S index and tongue coating, and to explain knowledge regarding tongue hygiene and tongue scrapers in children at the Sejati Muhammadiyah Rappang Orphanage. The research subjects were children from the Sejati Muhammadiyah Rappang Orphanage who were on site at the time of the research and were willing to follow the research procedures. Dental hygiene is assessed by the OHI-S index and tongue examination is based on the tongue coating index. A total of 24 men and 16 women were given questionnaires before and after counseling. The results showed there was no significant relationship between the two indices ( $p=0.382$ ). The distribution of questionnaire answers shows an increase in correct answers after providing counseling. However, based on education level and gender, there was no significant difference in knowledge regarding tongue hygiene and tongue scrapers ( $p=0.858$ ,  $p=0.486$ ). Non-significant differences were also seen in the comparison of groups that used and did not use a tongue scraper. It was concluded that there was no significant correlation between the OHI-S index and tongue coating. However, providing counseling was able to increase the knowledge of children at the Sejati Muhammadiyah Rappang Orphanage, although there was no difference in knowledge regarding tongue hygiene and tongue scrapers based on education level and gender.





**Key words:** OHI-S Index, Tongue Coating Index, Education, Tongue Hygiene, Tongue Scraper

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## 1. Introduction

Physical and mental health is an important thing that must be maintained. With good health, humans can carry out their activities optimally. Research results show that a person can be productive if he can focus on work without any health problems (Koopman et al., 2002). Health status also influences worker attendance (Li et al., 2019). Likewise mental health, the higher the level of mental health, the higher a person's performance or performance will be (Ghani et al., 2017).

Dental and oral health is an inseparable part of general health. It is not uncommon for poor dental and oral health to affect general health and interfere with daily activities. Even though someone can still attend work with a toothache, it can be said that their performance decreases because of the toothache (Lima & Buarque, 2019). Research in schools states that dental and oral health status influences student attendance and performance (Jackson et al., 2011). Meanwhile, in adolescents, dental and oral health can influence the quality of life of adolescents (Colussi et al., 2017).

Dental and oral health needs to be maintained so as not to interfere with the performance and quality of life of teenagers, because adolescence is a time of searching for identity. One way to maintain healthy teeth and mouth is to maintain oral hygiene. Efforts that can be made to achieve optimal results in reducing plaque are by brushing your teeth at least twice a day using fluoride toothpaste in the right way, using dental floss, and cleaning your tongue (Boustedt et al., 2020; Han & Park, 2017; Winnier et al., 2013).

The tongue is an important organ in the oral cavity that is often overlooked in the habit of cleaning the teeth and mouth. Based on microbiological research, the tongue is the main residence of various kinds of microbes (Monea, 2014). Cleaning the tongue





using a brush or tongue scraper can reduce the number of bacteria that play a role in halitosis, periodontal disease and throat infections. Apart from that, by cleaning the tongue, you can also activate the salivary glands which play an important role in preventing dental caries (Dwivedi et al., 2019; Hamid et al., 2011; Masago et al., 2020; Prijono E, Dewi W, 2007; R. Lipat et al., 2018; Widyastuti, 2021), Tongue scraper does not function as an antiseptic, but rather as a mechanical effort to improve oral health (Harbicht, 2014).

Previous research has proven that the prevalence of caries is high in adolescents due to their dietary habits and irregular dental check-ups (Tudoroni et al., 2020). Therefore, the community service team carries out dental health maintenance activities by brushing teeth and using a tongue scraper correctly. The aim of this activity is to increase knowledge and skills on how to maintain healthy teeth by brushing your teeth and using a tongue scraper correctly.

Currently, the public has limited information regarding attitudes and knowledge in maintaining OH. To achieve good health, maintaining dental and oral health in society requires several important things, including motivation to maintain oral hygiene, regular dental and oral examinations at the dentist, and individual understanding of how to maintain healthy teeth and mouth.

The dorsum of the tongue includes soft tissue, the entire surface of which consists of papillae which have a large surface area. Various organisms were found to colonize the dorsum of the tongue. Therefore, cleaning the tongue is very important, considering that the surface of the dorsum of the tongue is the main place for the growth of microorganisms, especially anaerobic bacteria, so that cleaning the tongue, apart from reducing halitosis, can also eliminate some facultative anaerobic and obligate anaerobic bacteria which play a role in periodontal disease.

Based on the above, it is necessary to know the public's knowledge regarding tongue hygiene and Tongue Scraper, especially children from the Sejati Muhammadiyah Rappang Orphanage.

## 2. Research Methods





To determine dental cleanliness, the OHI-S index is used, while tongue cleanliness is used by the tongue coating index. In this study, knowledge regarding tongue hygiene and tongue scrapers was also looked at, using a questionnaire. Descriptive observational research with a cross-sectional study design used 24 male and 16 female subjects who were children of the Sejati Muhammadiyah Rappang Orphanage and were willing to follow the research procedures. They were asked to fill out questionnaires before and after counseling. Data analysis used the SPSS version 12.0 program with data presentation in tabular form. The statistical tests used were the t-test, ANOVA and Spearman's rho with a p value <0.05.

### 3. Results and Discussion

#### 1. Results

##### Relationship between tongue cleanliness and OHI-S

Variable	Frequency N (%)	Mean ± elementary school
Type sex		
Man	24 (60)	1.29 ± 0.65
Woman	16 (40)	1.90 ± 0.70
Middle school education	26 (65)	1.61 ± 0.77
SENIOR HIGH SCHOOL	14 (35)	1.42 ± 0.65
OHIS OK	14 (35)	0.77±0.28
Currently	25 (65)	1.95 ± 0.53
Tongue coating <sup>1</sup>	5 (12.5)	1.60±0.80
before <sup>2</sup>	17 (42.5)	1.41 ± 0.73
3	18 (45)	1.65 ± 0.73
0	6 (15)	1.16 ± 0.49
Tongue coating <sup>1</sup>	15 (37.5)	1.38 ± 0.83
after <sup>2</sup>	19 (47.5)	1.62 ± 0.64
3	3 (7.5)	2.20 ± 0.53
<b>Total</b>	40	1.54 ± 0.73

Table 1 shows the distribution of several characteristics of research subjects, namely gender, education level, tongue coating before and after using the tongue scraper. Of the total sample of 40, there were more male subjects than female, namely 24 people (60%). Based on the level of education, the highest level of junior high





school education was found, namely 26 people (65%). Judging from the level of oral hygiene assessed based on OHI-S, the highest number was in the moderate category, as many as 26 people (65%). From measuring the tongue coating before using the tongue scraper, it was found that the largest number of subjects with a tongue coating index of 3 was found, namely 18 people. Meanwhile, after using the tongue scraper, the highest number of subjects were found with a tongue coating index of 2.

## 2. Discussion

In the results of this study, it appears that there is no significant relationship between the subject's OHI-S index and the tongue coating index before and after using the tongue scraper, the relationship is not significant. Several studies show that if the use of a tongue cleaner is combined with other OH methods, it can reduce the formation of dental plaque.

Badersten et al found that there was no difference in plaque accumulation between 4 days of using a tongue cleaner and 4 days without the OH procedure. When toothbrushing was compared with a combination of tongue cleaning for 1 week, there was no difference in plaque accumulation. Many factors could be the cause, for example most people tend to brush their teeth more often without brushing their tongue and consider cleaning their tongue to be less important.

Lapus said that according to the National Dental Health Survey in 2005 and 2006 in 17 regions of the Philippines, it was found that 15 year old children experienced gingival bleeding and/or calculus caused by oral hygiene habits, especially not brushing their teeth regularly which was accompanied by bad breath due to the accumulation of dirt on their teeth. tongue.

Using the t-test, there appears to be no significant difference between the two groups ( $p=0.697$ ). However, when compared between the values before and after counseling in the groups using and not using the tongue scraper, a significant difference was seen with a value of  $p = 0.000$ . From this table it can be seen that what influences the knowledge of orphanage children is counseling. Even though the counseling carried out was very simple, by directly using teaching aids to achieve the





counseling material, relaxed counseling interspersed with a little play was actually able to provide more optimal results.

From dental and oral health education, it is hoped that a good understanding of dental and oral health will be created. There are several types of dental and oral health education, but the methods most often used are dental and oral health education using the lecture method and dental and oral health education using the play method.

Berger et al., stated that apart from games being able to cross various age groups, games can also influence children's appearance in public to be more comfortable and thus become an aid in providing dental and oral health education.

#### 4. Conclusion

It was concluded that there was no significant correlation between the OHI-S index and tongue coating. However, providing counseling can increase children's knowledge, although there is no difference in knowledge regarding tongue hygiene and tongue scrapers based on education level and gender.

#### 5. Compliance with ethical standards

##### Acknowledgments

The researcher would like to thank the Director of the Hospital and his staff, especially the patient and the patient's family, as well as all parties who have helped carry out this research and hope that this research can be useful for the community and health workers, especially in providing health services to the community.

##### Disclosure of conflict of interest

This research collaboration is a positive thing for all researchers so that conflicts, problems and others are absolutely no problem for all writers.

##### Statement of informed consent

Every action we take as authors is a mutual agreement or consent.

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