

The Relationship between Tooth Brushing Techniques and Gingival Status in Patients Who Wear Fixed Orthodontics at a Private Dental Clinic in Makassar City

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Abstract:- Background: Dental and oral hygiene is an important factor that must be maintained by orthodontic users. An effort to maintain healthy teeth and mouth is by brushing your teeth. Patients who use a fixed orthodontic device must be able to maintain their oral cavity to avoid the onset of caries and marginal gingivitis. Because there is a relationship between the brushing technique and gingival status in patients who wear fixed orthodontics. **Research objectives:** To find out the relationship between tooth brushing techniques and gingival status in patients who wear fixed orthodontics at a private dental clinic in Makassar City in 2024. **Methods:** The type of research used in this study is quantitative research using a survey approach. Survey research is a research method that takes samples from a population. The data and information collected by the researcher came from respondents. **Results :** The results of the study were obtained that there were several patients who had gingival status with different categories, including the mild category as many as 5 gingiva indexes, and the moderate category as many as 4 gingiva indexes, while the severe category had 4 gingiva indexes. It can be seen that orthodontic users are very susceptible to experiencing poor oral hygiene caused by respondents who do not maintain their oral hygiene. **Conclusion :** There is a relationship between the tooth brushing technique and gingival status in patients who wear fixed orthodontics at a private dental clinic in Makassar City in 2024.

Keywords:- Knowledge of Halitosis, Dental and Oral Hygiene, Skilled Orthodontic Patients.

I. INTRODUCTION

Dental and oral health is recognized as an important unmet health need of a population (Singh, et. 2022). Based on *The Global Burden Of Disease Study 2016*. Dental and oral loss, especially dental caries, is a disease suffered by almost

half of the world's population, namely 3.58 billion people and more than 530 million children suffer from dental caries (WHO, 2018).

Dental and oral health is often ignored by Indonesians. They think that diseases of the teeth and mouth cannot cause a person to lose their life so that it is not a priority that needs to be maintained hygiene and health. However, based on existing facts, various kinds of dental and oral problems affect the function of other body systems and inhibit daily work productivity (Suryani, 2019).

Dental and oral health is closely related to the health of the body. The condition of the mouth and teeth that are not maintained will cause many problems and discomfort. In an effort to get good dental and oral health, awareness is needed to implement a healthy lifestyle by diligently brushing your teeth properly and correctly. Habits for healthy living need to be done with full awareness so that they can be carried out effectively (Pratiwi, 2020).

Dental and oral hygiene is a condition that indicates that inside a person's oral cavity is free of impurities, such as plaque and calculus. If dental and oral hygiene is neglected, plaque will form on the teeth and spread to the entire surface of the teeth (Pariati, 2021).

Dental and oral health can cause serious complications in health problems for other organs of the body. Minister of Health Regulation Number 89 of 2015.

Riskesdas in 2018 stated that the largest proportion of dental problems in Indonesia are damaged/cavities/diseased teeth, while oral health problems that are experienced by the majority of Indonesians are swollen gums and/or ulcers. West Java has dental and oral problems that are 28% higher than the national level, which is 25.9%. Meanwhile, Garut Regency has an even higher prevalence of dental and oral problems, which

is 36.7%, most of which are suffered by school-age children. This service was carried out at Madrasah Ibtidaiyah Al-Qomar in Garut Regency with the aim of improving their cognition in maintaining dental and oral health. The method used is an interactive lecture that begins with a *pre-test* and ends with a *post-test*. The results obtained were cognitive improvement in each question item, namely: the definition of dental and oral health (57.14%), the characteristics of healthy teeth (26.78%), the function of teeth (12.5%), the benefits of brushing teeth (23.21%), how to clean teeth and mouth (30.36%), how to brush teeth correctly (33.93%), the length of brushing teeth (35.71%), and the causes of tooth decay (25%).

Maintaining healthy teeth and mouth can be done by brushing your teeth properly and correctly (Atika Sari, 2021). Ministry of Health of the Republic of Indonesia 2023 Disease prevention is very important but is often forgotten or deliberately forgotten. Oral hygiene is an important factor that must be maintained by users of orthodontic devices. Things that affect the oral hygiene of users of fixed orthodontic devices are the components of fixed orthodontic devices that are difficult to use. The risk arising from poor oral hygiene can increase the occurrence of dental caries and other periodontal diseases (Charlito J. R. Galag et al., 2015)

Orthodontic users are nimble using several components of the tool that cause difficulties in cleaning teeth. An effort to

maintain healthy oral teeth is by brushing your teeth. The effectiveness of toothbrushes depends on the shape of the brush and the brushing method (Iftitah Rizqy Izzulilmi et al, 2022).

Patients who use delicate orthodontic devices must be able to maintain the cleanliness of their oral cavity to avoid the onset of caries and marginal gingivitis (Marlianti Hidayat, et al. 2021).

II. METHODS

The type of research used in this study is quantitative research using a survey approach. Survey research is a research method that takes samples from a population. The sample used was 35 respondents who came to the Dental Clinic who had received dental and oral health services and were willing to fill out a questionnaire

III. RESULT

The number of samples in this study was 35 ortho patients who came to the Dental Clinic who had received dental and oral health services and were willing to fill out a questionnaire. The research was conducted at the Makassar City Private Dental Clinic in February-March 2024.

Table 1. Characteristics of Respondents of Patients with orthodontics by Age

Patient Age	Frequency	Percentage
13 – 20 th	13	38
21 – 28 th	15	15
29 – 36 th	7	20
Total	35	100

Based on diagram 1.1 of the 35 respondents, it is known that the highest percentage with an age range of 13-20 years is (43%), respondents with an age range of 21-28 years are (38%) and the age range of 29-36 years is (20%).

Table 2. Frequency Distribution of Brushing Techniques

Brushing Techniques	Frequency	Percentage
Roll Technique	17	48
Scrub Technique	18	51
Total	35	100

Based on table 2 it can be seen that most of the respondents brushed their teeth using the roll technique, namely 17 respondents with a percentage (48%), while those who used the scrub technique were 18 respondents with a percentage of (51%).

Table 3. Frequency Distribution Based on Gingival Status

Status Gingiva	Frequency	Percentage
Light	5	35
Keep	4	28
Heavy	4	28
Total	14	100

Based on table 3 it can be seen that most of the respondents have mild gingival status criteria, namely 5 respondents with a percentage (35%) who have moderate inflammation, 4 respondents with a percentage (28%) and those who have severe inflammation, namely 4 respondents with a percentage (28%).

IV. DISCUSSION

Based on table 2 it can be seen that 17 respondents (48 percent) were respondents with the technique of rolling teeth (48 percent). And respondents with the technique of scrubbing teeth as many as 18 respondents (51%). This is in line with the 2013 wiradona study which showed that respondents who used orthodontics with the technique of scrubbing teeth were more, because orthodontic devices have components that are quite complicated to clean.

The results of the study were obtained that had gingiva status with a mild category of 5 gingiva index (35%) with a score of 0.5. and the medium category as many as 4 gingiva indices (28%) with a score of 1.5. While in the weight category, there were 4 gingiva indices (28%) with a score of 3.0. In this study, the prevalence of gingival status with severe inflammation was seen in 4 respondents. This is in accordance with research conducted by Lestari (2018) which states that orthodontic users are very susceptible to experiencing poor oral hygiene caused by respondents who do not maintain their oral hygiene.

Research also conducted by Lastianny (2012) stated that there is a relationship between the tooth brushing technique and the status of the gingiva in fixed orthodontic users. Fixed orthodontic devices have a complicated shape so that patients who use fixed orthodontic devices find it difficult to maintain oral hygiene because bacterial accumulation is easily formed around the components of fixed orthodontic devices. The use of fixed orthodontic devices can have an impact in the form of changes in the oral environment, an increase in the number of plaques, periodontal diseases such as gingivitis. Longer orthodontic treatments tend to cause damage to the gingiva, this is because patients complain of difficulty in cleaning their teeth.

V. CONCLUSION

Based on the results of research conducted at the Makassar City Private Dental Clinic, it can be concluded that:

- There is a relationship between the brushing technique and the status of the gingiva in orthostatic users
- As for those who have gingival status in orthodontic patients with a mild category, there are 5 gingival indices (35%) with a score of 0.5. and the medium category as many as 4 gingiva indices (28%) with a score of 1.5. While in the weight category, there were 4 gingiva indices (28%) with a score of 3.0.

- There is a relationship between the tooth brushing technique and the status of the gingiva in orthostatic users. Based on the technique used in brushing their teeth, most of the respondents brushed their teeth using the roll technique, namely 17 respondents with a percentage (48 %,) while those who used the scrub technique were 18 respondents with a percentage of (51 %).

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