

The Effect Of Maintenance Behavior Of Orthodontic User's Dental And Mouth Cleanliness With Dental Hygiene Status In Sman 1 Darul Imarah (Darul Imarah Public High School 1) Aceh Besar Regency

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ABSTRACT

The prevalence of orthodontic users according to age group, is greatest at the age of 15 years by 1%. This study aims to identify the behavior of orthodontic users in maintenance and to see the differences in the behavior of maintaining oral and dental hygiene of adolescent orthodontic users before and after counseling on dental and oral hygiene maintenance. The method used in this research is analytic by using the T test to see differences in behavior before and after counseling. The sample used is the total population, namely the students of SMAN Darul Imarah who use orthodontics totaling 56 students. The study was carried out with pre and post test group design and performed dental and oral hygiene checks using the PHP-M index before and after counseling. The results showed that there was an increase in knowledge after counseling with a p-value of 0.008, there was a change in attitude with a p-value of 0.001, there was a change in action with a p-value of 0.001 and a PHP-M value for the better which indicates the influence of knowledge, attitudes and actions of adolescent orthodontic users. become better after counseling. From the research and discussion, it can be concluded that there is an effect of dental and oral hygiene maintenance behavior on the oral hygiene of orthodontic adolescent users at SMAN 1 Darul Imarah, Aceh Besar. The attitudes and actions of orthodontic users became better after counseling. From the research and discussion, it can be concluded that there is an effect of dental and oral hygiene maintenance behavior on the oral hygiene of orthodontic adolescent users at SMAN 1 Darul Imarah, Aceh Besar. The attitudes and actions of orthodontic users became better after counseling. From the research and discussion, it can be concluded that there is an effect of dental and oral hygiene maintenance behavior on the oral hygiene of orthodontic adolescent users at SMAN 1 Darul Imarah, Aceh Besar.

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INTRODUCTION

The prevalence of malocclusion in Indonesia is still very high, which is around 80% of the total population and is one of the major dental and oral health problems^{1,2}. Based on the research results of the Health Research and Development Agency of the Ministry of Health of the Republic of Indonesia, the prevalence of malocclusion cases in children aged 13-15 years is 15.6%. At that age is the age group with the highest malocclusion compared to other ages. This is coupled with the level of awareness of dental care which is still low and the public is not yet aware of the importance of maintaining oral health^{3,4}. Dental and oral health services include dental and oral health services to improve dental function. Dental and oral hygiene is influenced by individual dental and oral hygiene maintenance behavior, the use of dentures, the use of orthodontic appliances either removable or fixed, gender, socioeconomic level^{5,6}. One of the ways to improve the function of teeth is by using orthodontics⁷. Orthodontic treatment is a treatment that requires a long term, therefore users should pay more attention to dental hygiene practices in order to maintain it⁸. Every orthodontic treatment has a relationship with the periodontal tissue, because in terms of moving the teeth and planning treatment related to the condition of the periodontal tissue⁹.

Orthodontic treatment or better known as braces treatment attracts the attention of many people, including children and adolescents. Most of them perform orthodontic treatment to improve their appearance and restore self-confidence¹⁰. Orthodontic treatment is a treatment that is carried out to correct existing malocclusions and requires a long treatment time¹¹. Orthodontic treatment aims to improve aesthetics, namely correcting the location and arrangement of teeth and preventing the occurrence of abnormal conditions of the face shape and improve the ability to function and speak as well as improve the position of teeth and jaws that are not normal so that the function of teeth, teeth and facial esthetics is good which will improve a person's psychosocial health^{12,13}. In orthodontic treatment,

One of the indicators to assess dental and oral health can be seen from the level of oral hygiene, including the presence or absence of organic deposits, such as pellicle, white matter, food debris, calculus, and dental plaque. Patient behavior in oral health during orthodontic treatment is very important to note. Bad behavior can make patients less concerned about their oral hygiene so that it can make oral hygiene worse. The American Academy of Pediatric Dentistry (AAPD) states that adolescence is a period of high plaque and caries activity due to increased consumption of cariogenic foods and their lack of understanding of dental and oral hygiene procedures.

Adolescents are a vulnerable group with dental hygiene problems. According to the World Health Organization (WHO) in growth and development, adolescents often experience health problems, one of which is dental and oral hygiene problems, so WHO recommends that the level of school students or adolescents in the age range of 10-19 years is the right group for health promotion. in terms of maintaining the health of the oral cavity and surrounding tissues. high school students are included in the age range of teenagers and school students. In the initial survey, it was found that the public High School 1 Darul Imarah is one of the favorite schools with the highest number of students using fixed orthodontic appliances with diverse student characteristics and no research has been conducted on the level of oral hygiene of students using orthodontic appliances. The use of fixed orthodontic appliances can be one of the risk factors for dental caries in its users. The control period that is too long can cause carious lesions that may form due to poor oral and dental hygiene to be detected too late so that they can progress to become more severe. Based on the results of an initial survey conducted on 10 senior public high school students Darul Imarah using orthodontics, It can be seen that between the orthodontics used there are debris and calculus.

The results of the initial examination showed OHI-S data for one person with good criteria (10%), six people with moderate criteria (60%) and three people with bad criteria (30%). The results of the author's interview with 10 respondents, 4 respondents had poor knowledge (40%), 6

respondents showed a fairly good attitude (60%), and the actions of 7 respondents were included in the poor category (70%). This study aims to determine the effect of oral hygiene maintenance behavior on orthodontic users with dental and oral hygiene status at Darul Imarah High School, Aceh Besar District. six people with moderate criteria (60%) and three people with poor criteria (30%).

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METHODS

This type of research is analytic to see whether or not there is a relationship between orthodontic users' oral and dental hygiene behavior with the dental hygiene status of students by using the Spearman correlation test with 0.05. The research design used was cross sectional, where the independent and dependent variables were measured at the same time and each subject was only observed once. The research was conducted at the Darul Imarah high school, Aceh Besar district. This research is planned to be conducted for one week at SMAN 1 Darul Imarah Aceh Besar District on April 13 to April 18 2020. The subjects of this study used a total sampling technique. The sample of this study was all students at SMAN 1 Darul Imarah Aceh Besar District who used orthodontics totaling 56 students. Primary Data Data obtained directly with PHP-M examination and interviews using a questionnaire conducted on students of public High School 1 Darul Imarah Aceh Besar District who use Orthodontics. Secondary Data It is a complement and support for primary data obtained through preliminary studies, school profiles and reports from related agencies. The dental and oral hygiene measurement index used in this study was PHP-M. If PHP-M is worth 0-15 then dental and oral hygiene is categorized as very good, if PHP-M is worth 16-30 then dental and oral hygiene is in good category, if PHP-M is worth 31-45 then dental and oral hygiene is in poor category and if OHI-S is worth 46-60, so dental and oral hygiene is categorized as very poor. Univariate analysis is carried out on research variables or analysis that describes singly the research variables, both independent and dependent in the form of a frequency distribution and the percentage is calculated.

RESULTS AND DISCUSSION

Hasil This study consisted of General Data, Pre Test Results, Dental and Oral Hygiene Data before and after counseling as well as Post Test Results which were analyzed using the Differential Test.

General Characteristics

Table 1. Gender Distribution of SMAN 1 Darul Imarah Students Orthodontic Users

No	Gender	frequency	%
1	woman	34	60.7
2	man	22	39.3
	total	56	100

From table 1 it can be seen that the gender of the students is mostly female

Table 2. Distribution of orthodontic dentist

NO	orthodontic dentist	frequency	%
1	Dental and Oral Therapist	33	58.9
2	Dentist/Specialist	14	25
3	Adentist	98	16.1
	total	56	100

From table 2 it can be seen that students install many orthodontic planes on dental and oral therapists

Univariate Analysis

Table 3. Frequency Distribution of Dental and Oral Hygiene Before and After Counseling on Orthodontic Adolescents

No	PHP-M Criteria	Before		After	
		F	%	F	%
1	Very good	0	0	39	69.64
2	Well	15	26.8	17	30.35
3	Bad	38	67.8	0	0
4	Very bad	3	5.4	0	0
Total		56	100	56	100

From table 3, there is an average PHP-M index before the extension was carried out. Most of them were in the bad category (67.8) and after the extension the average PHP-M index was mostly in the Very Good category (69.64).

Table 4. Distribution of Knowledge Frequency Before and After Counseling on orthodontic adolescents

No	Knowledge	Before		After	
		F	%	F	%
1	Well	2	3.5	27	48.2
2	Enough	6	10.8	20	35.7
3	Not good	48	85.7	9	16
Total		56	100	56	100

From table 4, the knowledge of adolescents using orthodontics before counseling was mostly in the poor category (85.7%) and after counseling the knowledge of adolescents using orthodontics was mostly in the good category (48.2).

Table 5. Distribution of Attitude Frequency Before and After Counseling in orthodontic adolescent users

No	Attitude	Before		After	
		F	%	F	%
1	Well	6	10.8	30	53.5
2	Enough	34	60.7	24	42.8
3	Not good	16	28.5	2	3.5
Total		56	100	56	100

From table 5 the attitudes of adolescents using orthodontics before counseling were mostly in the sufficient category (60.7%) and after counseling the attitudes of adolescents using orthodontics were mostly in the Good category (53.5%).

Table 6. Distribution of Frequency of Actions Before and After Counseling on orthodontic adolescent users

No	Action	Before		After	
		F	%	F	%
1	Well	2	3.5	22	39.2

2	Enough	7	12.5	34	60.7
3	Not good	47	83.9	9	16
Total		56	100	56	100

From table 6, the actions of adolescent orthodontic users before counseling were mostly in the poor category (83.9%) and after counseling the attitudes of orthodontic adolescents were mostly in the sufficient category (60.7%).

Bivariate Analysis

Table 7. Average Differences Before and After Counseling About Dental Hygiene Maintenance in Orthodontic Adolescents

No	Variable	$\bar{X} \pm SD$	P
1	PHP-M		0.008
	Pretest	31.2 + 8.3	
2	Knowledge		0.002
	Post-test	13.7 + 3.4	
3	Attitude		0.001
	Pretest	1.8 + 0.8	
4	Action		0.001
	Post-test	3.3 + 0.8	
3	Attitude		0.001
	Pretest	12.8 + 2.2	
4	Action		0.001
	Post-test	13.8 + 1.6	
4	Action		0.001
	Pretest	9.3 + 2.4	
4	Action		0.001
	Post-test	12.5 + 1.7	

From table 7 there is a decrease in the average PHP-M index of orthodontic users before and after counseling by 17.5 with a p-Value of 0.008. Furthermore, there was an increase in the average knowledge of orthodontic users before and after counseling by 1.5 with a p-Value of 0.002, there was an increase in the average attitude of orthodontic users before and after counseling by 1 with a p-value of 0.001, and there was an increase in the average actions of orthodontic users before and after counseling of 3.2 with a p-value of 0.001.

Table 8. Differences Before and After Counseling Regarding Dental Hygiene Maintenance in Orthodontic Adolescents

No	Variable	$\bar{X} \pm SD$	CI		P
			L	U	
1	PHPM Pre-Post test	17.4 + 7.7	15.3	19.5	0.0001
2	Pre-Post Test Knowledge	-1.4 + 0.9	-1.7	-1.2	0.0001
3	Attitude Pre-Post Test	-1 + 1.4	-1.4	-0.6	0.0001
4	Pre-Post Test Action	-3.1 + 1.7	-3.6	-2.7	0.0001

From table 8 there are differences in the PHP-M index, knowledge, attitudes and actions of adolescent orthodontic users before and after counseling with a p-value of 0.0001.

Discussion

The results showed that there was a change in the knowledge of orthodontic users before and after counseling. This is evidenced by an increase with an increase of 1.5 and a p-value of 0.002. knowledge before counseling, most of them were in the poor category (85.7%) and after counseling the knowledge of orthodontic users teenagers were mostly in the good category (48.2%). Knowledge of dental health will underlie attitudes that affect a person's behavior in maintaining dental and oral hygiene. The results of the study also found that most of the knowledge students gained came from information received and experience. more and more lessons come from experiences such as about maintaining dental health, complaints about toothaches, periodontal tissue pain and how to overcome them ¹⁵.

This shows that good knowledge about the maintenance of dental and oral hygiene can result in good dental and oral hygiene as well. high knowledge of dental and oral hygiene showed positive dental care behavior, on the other hand respondents who had low knowledge of dental

and oral hygiene showed negative dental care behavior. It is proven that there is a difference in the average attitude of orthodontic users before and after counseling with an increase of 1 and a p-value of 0.001. In the aspect of attitude, it is known that 56 respondents who used orthodontics had attitudes in the sufficient category (60.7%) before counseling, and after counseling their attitudes increased in the good category (53, 5%) maintenance of dental and oral hygiene with sufficient category. Attitudes are obtained through the learning process so that changes in attitudes are also obtained through the learning process.

This learning process not only affects one's beliefs, but also affects affective reactions and behavioral tendencies. In the aspect of action, there are also changes in the actions of orthodontic users before and after counseling. This is evidenced by a change in the value after counseling with an increase of 3.2 and p-value of 0.001. In the aspect of action, it is known that from 56 respondents using orthodontics, it is known that the action before counseling is in the poor category as much as 83.9% while after counseling most of them are in the sufficient category of 60.7%. Based on the results of the different tests obtained a value of $p = 0.0001$ ($p < 0, 05$) which means that there is a significant effect between the user's dental and oral hygiene maintenance actions.

The results of this study are in accordance with other studies which state that there is a relationship between the action and the status of dental and oral hygiene. In this study, it was stated that the respondent's actions were categorized as being in line with the moderate dental and oral hygiene status. This study is also supported by other studies which state that there is a relationship between dental health behavior and the level of dental and oral hygiene¹⁷. A total of 89.3% admitted that they had never used a special orthodontic brush and preferred a conventional toothbrush. Most of the respondents are also less compliant to perform orthodontic control treatment at the dental clinic every 3 weeks. The average action of all respondents is in the poor category, which is 46.61%. There are several behaviors that affect research subjects such as the time and the correct way of brushing teeth¹⁸. Brushing your teeth is a commonly recommended way to clean various dirt on the teeth. Brushing your teeth properly is twice a day, namely in the morning after breakfast and at night before going to bed, this aims to clean the remaining food left on the teeth.

The success of maintaining oral and dental health is influenced by the use of the selected toothbrush, the method and the frequency and timing of brushing teeth on time. Brushing your teeth is a commonly recommended way to clean various dirt on the teeth. Brushing your teeth properly is twice a day, namely in the morning after breakfast and at night before going to bed, this aims to clean the remaining food left on the teeth. The success of maintaining oral and dental health is influenced by the use of the selected toothbrush, the method and the frequency and timing of brushing teeth on time. Brushing your teeth is a commonly recommended way to clean various dirt on the teeth. Brushing your teeth properly is twice a day, namely in the morning after breakfast and at night before going to bed, this aims to clean the remaining food left on the teeth. The success of maintaining oral and dental health is influenced by the use of the selected toothbrush, the method and the frequency and timing of brushing teeth on time

CONCLUSION

There is a difference in the average knowledge of orthodontic users before and after counseling with an increase of 1.5 and p-value of 0.002. There is a difference in the average attitude of orthodontic users before and after counseling with an increase of 1 and a p-value of 0.001. there is a difference in the average action of orthodontic users before and after counseling with an increase of 3.2 and p-value of 0.001. There is a difference in the average PHP-M of orthodontic users before and after counseling with a decrease in PHP-M value of 17.5 and p value of 0.008.

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