INDONESIAN JOURNAL OF DENTISTRY
Faculty of Dentistry Universitas Muhammadiyah Semarang

THE RELATIONSHIP BETWEEN LEVEL OF KNOWLEDGE OF FIXED ORTHODONTIC YOUNG ADULT PATIENTS AND DENTAL HYGIENE

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Received March 15th, 2024; 1st revision April 25th, 2024; Accepted April 25th, 2024; Published online April 29th, 2024.

Keywords:

Dental Hygiene, Fixed orthodontic, Level of knowledge, Patients, Young Adults

Indonesian Journal of Dentistry
Volume 4 No 1 Issue 5 Year 2024 Pages 40-45
URL https://jurnal.unimus.ac.id/index.php/IJD
DOI http://dx.doi.org/10.26714/ijd.v4i1.14358

ABSTRACT

Background: Oral hygiene is the main key to the success of fixed orthodontic treatment. Most fixed orthodontic patients are young adults where the level of knowledge and awareness of oral hygiene is low. The level of knowledge is very important in underlying the formation of behavior that supports dental and oral hygiene during the use of orthodontic devices in the patient's mouth. This knowledge can be obtained naturally or planned, namely through the educational process. Other knowledge is also obtained from many sources such as social media, television media or print media.
Methods: This research is observational analytics with a cross sectional study. The population in this study was 121 patients aged 20-30 years old, there are 55 patients for samples using simple random sampling. The data collection instrument uses a questionnaire.
Results: The results using the Chi-square test analysis t showed that p = (0.00) < α (0.05).
Conclusion: That state that there is a relationship are obtained because the p value of 0.00 is smaller than 0.05, where the better the level of knowledge, the better the dental hygiene. There is a relationship between the level of knowledge of fixed orthodontic young adults patients and dental hygiene.

INTRODUCTION

From adolescence to adulthood the need for orthodontic treatment is very high, plus the long duration of orthodontic treatment causes many problems if the patient does not have sufficient insight into maintaining oral hygiene[1]. Several studies showed a significant increase in the quantity of dental plaque and the occurrence of gingivitis in patients with fixed orthodontic appliances. For this reason, special efforts are required for adequate oral hygiene during fixed appliance treatment as its presence makes tooth cleaning more difficult. During fixed orthodontic appliance therapy, patient's knowledge, motivation, cooperation, and attitude toward treatment are key factors of oral hygiene maintenance. Poor maintenance of oral hygiene may be due to lack of knowledge or negligence by patients themselves. Various reports have shown that orthodontic patient's knowledge on their gingival health was poor[2].

Patient knowledge underlies the formation of behavior that supports dental and oral hygiene during fixed orthodontic treatment. The process of acquiring knowledge can be obtained through educational formally or by obtaining it from existing media. The result of poor oral hygiene during orthodontic treatment, including the occurrence of massive caries, especially on the surface of the teeth where the brackets are attached. Gingivitis and periodontitis which result in unexpected tooth mobility[3]. The longer the duration of orthodontic treatment, the higher the prevalence/extent of active caries lesions[4]. By opening access to information, it is hoped that the level of patient knowledge regarding maintaining oral hygiene during fixed orthodontic treatment can increase. This is directly proportional to the better the level of knowledge, the better the oral hygiene[5]. The aim of this research is to increase knowledge about the important role of oral hygiene, which is carried out regularly. In patients using fixed orthodontics, it reduces the risk of gingivitis, caries, tooth surface discoloration, bad breath, and periodontitis.

METHODS

The research uses observational analytics with a cross sectional study approach. The patient population is 121 people, with an age range of young adults, between 20-30 years. The sample taken was 55 people, with simple random sampling. There are 2 variables studied, namely the patient's level of knowledge by answering a questionnaire of 20 questions, regarding knowledge of the quality, quantity of oral hygiene cleaning and how far they know the risks of using fixed orthodontic devices in the mouth for a long time. The knowledge level questionnaire is categorized as follows if the answer is correct, it is given a value of 1, whereas if the answer is incorrect, it is given a value of 0. The level of knowledge of patients using fixed orthodontics is categorized as good, if 76-100%. sufficient category, if the value is 60-74%, while insufficient if the value is 0-59%. The second variable, oral hygiene includes debris, plaque, and calculus on the surface of the teeth using the Oral Hygiene Index Simplefied (OHI-S) which is assessed using an ordinal scale. A good OHI-S score of 0-1.2 is coded as 3. A moderate OHI-S score of 1.3-3.0 is coded as 2. Poor OHI-S score of 3.1-6.0 is coded as 1.[6] Then the research results were analyzed using chi-square using the SPSS (Statistic Product Service Solution).

RESULTS

This research was conducted in October 2023, at the Wijaya Kusuma University clinic, Surabaya.

Table 1. Characteristics of Respondents Based on Age.

Age	Frequency	Percentage (%)
20-25 years old	43	21,8
26-30 years old	12	78,2
Total	55	100

In table 1 explains the distribution of respondents based on age where 20-25 years old were 43 respondents with a percentage of 21.8%. while there were 12 respondents with an age range of 26-30 years with a percentage of 78.2%.

Table 2. Characteristics of Respondents Based on Last Education.

Last Education	Frequency	Percentage (%)
1st Graduate	38	69,1
High School	10	18,2
Junior High School	7	12,7
Total	55	100

In table 2 explains the distribution of respondents based on their last level of education. Three groups were obtained, namely 38-person 1st graduates with a percentage of 69.1%. group number 2, high school graduates of which there are 10 people with a percentage of 18.2%. while the last group was 7 junior high school graduates with a percentage of 12.7%.

Table 3. Characteristics of Respondents Based on Getting Information from The Media.

Media Used	Frequency	Percentage (%)
Instagram	40	72,7
Youtube	14	25,4
WhatsApp	1	1,9
Total	55	100

In table 3 explains the characteristics of respondents in obtaining information regarding dental and oral hygiene knowledge. In this distribution, Instagram media has the most important role in sharing information with young adult patients compared to YouTube and WhatsApp.

Table 4. Relationship Between Level of Knowledge of Fixed Orthodontic Young Adult Patients and Dental Hygiene.

OHI-S Level / Knowledge	Good	Moderate	Poor	Total	p-value
Good	8 (14,5%)	8 (14,5%)	2 (3,6%)	18 (32,7%)	0,00
Sufficient	1 (1,8%)	11 (20%)	4 (7,3%)	16 (29,1%)	
Unsufficient	0 (0%)	4 (7,3%)	17 (30,9%)	21 (38,2%)	
Total	9 (16%)	23 (42%)	23 (42%)	55 (100%)	

DISCUSSION

Knowledge can be influenced by several factors. The older you get, the more your understanding and thinking patterns develop, so that the knowledge is increasing .[7] There are two motivational factors for awareness to clean and maintain dental health, namely internal factors, namely the patient's full awareness of the importance of long-term health, especially in the oral cavity. and external factors where the patient's motivation is due to external factors, for example because parents or friends tell them to.[8] In young adulthood, individuals will play a more active role in society and social life and do more for the success of fixed orthodontic treatment.[9]

Based on the results of examinations using the oral hygiene index simplified (OHI-S), debris and calculus on the surface of the teeth found that the majority of patients were aware that it would greatly influence clean living habits.[10] This was obtained from research results obtained from the chi square statistical test which is quite valid for nominal data used in analyzing a relationship between events and certain factors. The results in table 4, that state that there is a relationship are obtained because the p value of 0.00 is smaller than 0.05, where the better the level of knowledge, the better the dental hygiene.[11] Due to poor oral hygiene plus orthodontic treatment which takes a long time, it will result in the accumulation of debris and calculus. Then caries occurs on the surface of the teeth. Preventive measures that can be carried out during orthodontic treatment carried out by the patient themselves

include water jets with tools, brushing teeth regularly with a toothbrush and toothpaste according to needs. Treatment carried out by a dentist can carry out scaling as an act of cleaning calculus and cleaning between fixed orthodontic devices. Topical fluoride administration before attaching the bracket is also necessary as an effort to prevent caries.[12] Control routinely used in addition to evaluating the results of fixed orthodontic treatment, as well as an evaluator of controlling the level of caries events that can occur. If there is caries, treatment or filling is carried out as soon as possible.[13] The importance of information in the form of dental health education which is always repeated every time a patient undergoes a routine check-up. Intensive education by each health worker can be carried out on social media, because currently the most effective way to absorb information is through social media as well as mass media. The most effective social media in this research was found to be Instagram.[14]

CONCLUSION

There is a relationship between the level of knowledge of fixed orthodontic young adult patients and dental hygiene.

ACKNOWLEDGMENT

The researcher would like to thank the Faculty of Medicine, Wijaya Kusuma University, Surabaya, and the respondents who participated and all parties who helped the researcher complete this research.

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