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**DIFFERENCES IN THE PSYCHOSOCIAL STATUSES OF TREATED AND
NON-TREATED ADOLESCENTS WITH ORTHODONTIC TREATMENT**

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ABSTRACT

Background: Psychosocial is defined as a condition that occurs in individuals that can be seen from their behavior and influenced by the emotional development, personality, and individual social relationship. One of the factors that can affect psychosocial is the state of the teeth. The condition of misalignment teeth can have a psychosocial impact, especially adolescents. A person who has misalignment teeth should have orthodontic treatment. Orthodontic treatment can improve his psychosocial health condition.

Purpose: The purpose of this study was to analyze differences in the psychosocial status of adolescents who did and did not undergo orthodontic treatment. **Method:** This study used an observational analytic method with a cross sectional approach. The sample size was calculated using the Slovin formula. The study was conducted at SMAN 2 Banjarmasin with a total sample of 93 students consisting of 27 students who did orthodontic treatment and 66 students who did not undergo orthodontic treatment. Data collection using a preliminary survey and PIDAQ questionnaire. Data analysis consisted of univariate analysis to describe the characteristics of each variable and bivariate analysis to see the difference between in the mean of the two groups of subjects using the Independent T Test. **Results:** The psychosocial status of adolescents who did orthodontic treatment is moderate with an average PIDAQ score is 50.6. The psychosocial status of adolescents who did not undergo orthodontic treatment is moderate with an average PIDAQ score is 45.8. **Conclusion:** There is no difference in psychosocial status between adolescents who did and did not undergo orthodontic treatment.

Keywords: Adolescent, orthodontic treatment, PIDAQ, psychosocial

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INTRODUCTION

Psychosocial development is a change of emotions, personality, and social in someone. A good psychosocial development makes children having a good personality, while poor psychosocial development makes children like to be alone and not confident. A good personality is those who have courage, confidence, and cooperation. According to the theory by Erikson, humans develop not only cognitively but also socially. Based on this theory, Erikson classified psychosocial development into several stages.¹ The stages of psychosocial development, according to Erikson, are infancy, early childhood, preschool, school age, adolescence, young adulthood, middle adulthood, and maturity.²

Adolescents in psychosocial development are at the stage of seeking self-identity. Self-identity is everything showing someone, such as the determining choices of life, goals, values, and understanding themselves. Adolescent self-identity is formed through direct interactions that influence their attitudes, learning a role, and forming behaviors.³ In adolescents, others perspectives are very important for them because the first thing noticed by a person when having interaction is a face, especially when they are smiling, so that dental aesthetics may affect psychosocial.¹

A study conducted by Ma'rifah and Budiani found that adolescents who have low self-esteem or lack of confidence are 53.4 %. Low self-esteem is influenced by aspects of consciousness,

adolescent self-acceptance, and weak assertiveness.⁴ Adolescent psychosocial, based on the previous study, is obtained that there are insignificant differences between girl and boy adolescences, where the girl have greater psychosocial problems.^{5,6} This is because girls pay more attention to dentofacial appearance, social impact, psychological impact, and high self-perception rather than boys.⁵

Society thinks that the facial appearance of someone is important.⁷ One of the factors that can influence facial appearance is the structure of the teeth. Therefore, if dental problems occur, such as malocclusion, it will impact the psychosocial of someone.^{6,7} Malocclusion is an abnormal tooth or jaw relation that will interfere with mastication, speech, swallowing, and aesthetics, which eventually impact on psychosocial of someone.⁶

In Indonesia, the prevalence of malocclusion is still very high, approximately 80% of the total population, and is the third-highest dental and oral health problem after caries and periodontal diseases. According to Basic Health Research in 2013, the highest prevalence of malocclusion in South Kalimantan was in school-age of 15.6%.⁸ A person with a malocclusion condition should have orthodontic treatment. The purpose of orthodontic treatment is to improve masticatory function, speech, swallowing, and aesthetics so that it can improve psychosocial health conditions.⁹ Based on Basic Health Research in 2018, the prevalence of orthodontic treatment in Indonesia is 0.3% and South Kalimantan of 0.32%. The prevalence of orthodontic treatment in South Kalimantan, based on gender, is men of 0.18% and women of 0.46%.¹⁰

Psychosocial Impact of Dental Aesthetic Questionnaire (PIDAQ) is a psychometric measuring instrument to measure the psychosocial impact of dental aesthetics and quality of life, related to oral health.⁵ Based on the description above, study to find out the differences of adolescents psychosocial status undergoing and not undergoing the orthodontic treatment is required.

RESEARCH METHODS

This research was quantitative research using an observational analytical method with a cross-sectional approach. The population of the study was students of SMAN 2 Banjarmasin. Based on the sample calculation using the Slovin formula, the minimum sample of this study was 93 samples consisting of samples undergoing orthodontic treatments and not undergoing orthodontic treatments. The sampling technique used was simple random sampling, a simple

random selection and selected based on the criteria set by the researcher. The inclusion criteria in this study were adolescents in SMAN 2 Banjarmasin of 15-18 years old and willing to participate in the research. The exclusion criteria in this study were adolescents who feel their teeth are proper. The research instruments used were the preliminary survey and Psychosocial Impact of Dental Aesthetic Questionnaire (PIDAQ) distributed via Google Form. PIDAQ consisted of 23 questions, where 6 questions were about dental self-confidence, 8 questions about social impact, 6 questions about psychological impact, and 3 questions about aesthetic concern. The psychosocial status was classified based on PIDAQ total score into 3, good psychosocial status for a total score of 0-30.6, moderate psychosocial status for a total score of 30.7-61.3, and low psychosocial status for a total score of 61.4-92.

This research was conducted by providing a preliminary survey in the form of questionnaires to all students of SMAN 2 Banjarmasin via Google Form to obtain samples that meet the criteria. The samples selected according to the criteria were selected again of 93 samples using simple random sampling. The researcher explained and requested approval in the form of informed consent to 93 selected samples. The samples were instructed to fill out the Psychosocial Impact of Dental Aesthetic Questionnaire (PIDAQ). The results of the PIDAQ were analyzed by statistical analysis.

RESULTS

Based on the study conducted, the results obtained are:

Table 1. The Frequency Distribution of Orthodontic Treatment Status

Orthodontic Treatment Status	Frequency (n)	Percentage
Undergoing Orthodontic Treatment	27	29 %
Not Undergoing Orthodontic Treatment	66	71 %
Total	93	100

Based on table 1, it was obtained the results that respondents who do not perform orthodontic treatment had the highest frequency of 66 people.

Table 2. The Frequency Distribution of Orthodontic Treatment Status by Gender

Orthodontic Treatment Status	Gender	
	Male	Female
Undergoing Orthodontic Treatment	4	23
Not Undergoing Orthodontic Treatment	16	50
Total	20	73

Based on table 2, it was obtained the results that respondents who do not perform orthodontic treatment had the highest frequency of 50 people.

Table 3. The Frequency Distribution of Psychosocial Status by PIDAQ

Psychosocial Status	Frequency (n)	Percentage
Low	26	28 %
Moderate	49	52,7 %
Good	18	19,3 %
Total	93	100

Based on table 3, the results showed that moderate psychosocial status had the highest frequency of 49 people with an average PIDAQ score of 43.6.

Table 4. Distribution of Psychosocial Status of Adolescents Undergoing Orthodontic Treatment

Psychosocial Status	Frequency (n)	Percentage
Low	10	37 %
Moderate	14	51,9 %
Good	3	11,1 %
Total	27	100

Based on table 4, the results showed that a moderate psychosocial status of adolescents undergoing orthodontic treatment had the highest frequency of 14 people with an average PIDAQ score of 43.1.

Table 5. Distribution of Psychosocial Status of Adolescents Not Undergoing Orthodontic Treatment

Psychosocial Status	Frequency (n)	Percentage
Low	16	24,3 %
Moderate	35	53 %
Good	15	22,7 %
Total	66	100

Based on table 5, the results showed that a moderate psychosocial status of adolescents undergoing orthodontic treatment had the highest frequency of 35 people with an average PIDAQ score of 43.8.

Table 6. The Percentage of Frequency by Orthodontic Treatment Status and Psychosocial Status

Psychosocial Status	Orthodontic Treatment Status	
	Undergoing Orthodontic Treatment	Not Undergoing Orthodontic Treatment
Low	37 %	24,3 %
Moderate	51,9 %	53 %
Good	11,1 %	22,7 %
Total	100 %	100 %

Based on table 6, the results showed that adolescents not undergoing orthodontic treatment with moderate psychosocial status had the highest percentage of 53%.

Table 7. Data Analysis Using Free T-Test

Data Analysis	Significance
Orthodontic treatment status with psychosocial	0,255

Based on table 7, it was found that the significance value of orthodontic treatment status with psychosocial status was 0.255, which is more than 0.05. This means that there was no difference in psychosocial mean between the group undergoing and the group not undergoing the orthodontic treatment, so that the hypothesis was rejected.

DISCUSSION

Psychosocial Status of Adolescents Undergoing Orthodontic Treatment

Adolescents undergoing orthodontic treatment have different reasons and purposes for doing the treatment.¹¹ The purpose of undergoing orthodontic treatment is to improve function, teeth structure, facial appearance or aesthetic, speech function, psychosocial well-being, and quality of life.^{11,12} The biggest reason for someone undergoing orthodontic treatment is to improve the psychological problems related to dental problems and their facial appearance or aesthetic.¹³ A good dental structure makes the dental aesthetics and attractive facial appearance as well as the masticatory and the speech functions so that it will increase self-confidence, which will influence the quality of life and social interactions.¹²

Based on the results of the study in table 2, it was found that more girls perform orthodontic treatment than boys. These results are because girls are less confident if they have a malocclusion, which will reduce their aesthetic value so that they have more desire to perform orthodontic treatment.¹⁴ Girls also more understand and care for getting care and treatment and pay more

attention to their health and facial aesthetics than boys.^{15,12} According to Louwse, there is a concept of needs explaining why someone undergoes treatment is that they have psychosocial awareness and changes in themselves, which want a more attractive appearance, especially girls.¹⁶ Based on the theory by Erikson regarding stages of psychosocial development, those in the adolescent phase will be busy with themselves, where girls begin to pay attention to their lifestyle and appearance to gain self-confidence, and boys will feel confident if they get stronger and have abilities.^{2,17}

Orthodontic treatment is not only to improve masticatory function, speech, swallowing, and aesthetics but also can improve the psychosocial health of someone.⁹ Based on the results shown in table 4, it was found that adolescents undergoing orthodontic treatment have moderate psychosocial status. This result may be due to respondents undergoing orthodontic treatment have not used orthodontic appliances for a long time, so that there is no significant change, either in its function, esthetics, and psychosocial health.¹⁷

Psychosocial Status of Adolescents Not Undergoing Orthodontic Treatment

Adolescents not undergoing orthodontic treatment are caused by a lack of knowledge and level of awareness regarding malocclusion so that so they do not feel they have malocclusion and do not know that they need orthodontic treatment.¹¹ Socio-economic status also influences the decision to undergo orthodontic treatment because the high cost of installation and routine control makes someone decide not to perform the treatment.¹⁴ Low economic status groups are mostly satisfied with their situation and more tolerant to malocclusion and place an orthodontic treatment on low priority needs. A long-term treatment period in orthodontic treatment can also make a person refuse to perform a treatment.¹⁸

Misalignment teeth and no orthodontic treatment will cause impaired masticatory function, speech, swallowing, and aesthetics, which eventually impact psychosocial health.⁶ Based on the results shown in table 5, it was found that adolescents not undergoing orthodontic treatment have moderate psychosocial status. These results are because the improper arrangement of teeth is not too severe so that it still makes an attractive facial appearance and positive reaction, in which accepting their weakness makes a person feel confident and not difficult in having social relation.¹⁷ The lack of knowledge and awareness about malocclusion can influence the subjective perception of someone to malocclusion,

in which even though they have severe malocclusion, they may still be satisfied with their dental aesthetics. An important principle of social psychology is that the social situation is a stronger determining factor to the behavior or self-confidence of someone compared to the individual characteristics. A person will feel comfortable and confident if they have adequate social interaction and feel accepted and cared for by others. Most adolescents feel that even though they have malocclusion, but there is no disruption in their social acceptance, so it will not affect their psychosocial condition.¹⁹

Differences in the Psychosocial Statuses of Adolescents Who Did and Did Not Undergo Orthodontic Treatment

Based on the results shown in table 7, it was found that there is no difference in the psychosocial status of adolescents undergoing and not undergoing orthodontic treatment. These results are because even though adolescents have performed orthodontic treatment, but their confidence is still not optimal. It is because the use of orthodontic appliances has not been too long so that the results desired are not visible and have not affected their psychosocial condition.¹⁷ Adolescents not undergoing orthodontic treatment may have less knowledge so that even though they have malocclusion, they are still confident and do not affect their psychosocial condition. This also can be caused by the improper arrangement of teeth only assessed by the perception of respondents, where everyone has a different perception depending on their knowledge and awareness about malocclusion.¹⁹ Based on this, it can be concluded that there is no difference in psychosocial status between adolescents who did and did not undergo orthodontic treatment.

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