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ORIGINAL ARTICLE

The perspective of prosthodontic treatment in adolescent

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ABSTRACT

Background: Tooth loss among adolescents may impair masticatory function, alter speech articulation, and affect facial aesthetics. Prosthodontic treatment provides essential restorative options for replacing missing teeth. However, despite its importance, a considerable gap remains in the literature regarding adolescents' perspective toward prosthodontic treatment. Objective: This study aims to evaluate the adolescents' perspective toward prosthodontic treatment. Methods : A self-administered questionnaire were given to participants. The perspective of prosthodontic treatment was evaluated using three sections: awareness, knowledge, and attitude. The data respondent were collected and categorized into poor, fair and good. The statistical analysis was performed using reliability and validity tests, as well as the Kolmogorov–Smirnov test (P > 0.05).Write your abstract here. Maximum 200 words, single paragraph, in English. Include background, objective, method, result, and conclusion. Result: The adolescents have fair awareness, knowledge, and attitude regarding the prosthodontic treatment. Conclusion: These study showed that adolescents' fair perspective of prosthodontic is still insufficient, highlighting the need for improved early education. (IJP 2025;6(2):166-170)

Introduction

Tooth loss is remains as one of the global burden of oral disease.[1] Tooth loss may caused by several factors, including dental caries, periodontal disease, and traumatic injury.[2] The World Health Organization (WHO) reported that the prevalence of tooth loss 6.82% with the number of cases 350 million people around the world.[1] The Indonesian Health Survey 2023 reported tooth loss was the second most prevalent oral problem after dental caries with the prevalence 21%. The most vulnerable for the tooth loss is in elderly with the prevalent 37.2-46.5%. However, tooth loss may affect individuals of all ages, including those in adolescence groups (10-19 years old). The prevalence of the permanent tooth loss in Indonesian adolescence was 37.2% in the age 10-14 and 36% between 15-24.[3]

Permanent tooth loss effects the masticatory function, articulate speech, and aesthetic of the individual. Tooth loss also can contribute to the psychological and social problem which lead to the quality of life.[4] These consequences can be particularly significant for adolescents, as the adolescents represents a critical transitional period between childhood and adulthood, characterized by significant social, physiologic, and psychological changes. It also well documented that tooth loss was associated with a substantially higher risk of bullying in school-aged children.[5]

Prosthodontic treatment offered the restorative treatment for tooth that can restore mastication, aesthetic and articulation.[6] There are several prosthodontic treatment options in adolescence available for replacing missing teeth, including fixed prostheses such as crowns and bridges, removable partial and complete dentures, as well as implant-supported dentures.[6,7] The prosthodontic treatment can be performed by the prosthodontist and the general dentist. However, the presence of unlicensed denture makers poses a significant challenge, as they perform denture fabrication and treatment without adequate consideration of the surrounding oral tissues. This practice often leads to various complications and may compromise the patient's oral health.[8] Despite the importance and availability of prosthodontic treatment, many individuals in the community still lack adequate awareness and understanding of this treatment. Research on adolescent oral health has traditionally focused on the most prevalent oral diseases, such as dental caries and periodontal diseases.[2] Even knowledge and awareness about the various prosthodontic treatment in tooth loss were reported in literatures,[7,9-12] the perspective (knowledge, awareness, and attitude) of prosthodontic treatment in adolescence is still unexplored. Given these concerns, understanding how adolescents perceive prosthodontic treatment becomes increasingly important. Adolescence is a formative period during which health-related beliefs, behaviors, and attitudes begin to develop and may persist into adulthood. Their perceptions of tooth loss and prosthodontic treatment can influence treatment-seeking behavior, acceptance of dental interventions, and long-term oral health outcomes.[2] Therefor this study aims to evaluate the perspectives of prosthodontic treatment in adolescence. This study is essential to identify gaps in knowledge, targeted educational strategies, and promote restorative oral health behaviors.

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Table 1. The questionnaire result

Awareness	Score	Frequency	%
The regular visit for dental check-ups			
Never	1	29	13.74
No, but have visited a dentist before	2	70	33.18
No, only when there is a complaint	3	82	38.86
Yes, once a year	4	12	5.69
Yes, every 6 months	5	18	8.53
The experience the loss of a permanent tooth			
No	1	38	18.01
Yes	2	173	81.99
The urgency of replacing missing teeth with dentures			
Not required at all	1	26	12.32
Not required	2	24	11.37
Required, but not urgent	3	69	32.70
Required in the near future	4	52	24.64
Required as soon as possible	5	40	18.96
The purpose of replacing missing teeth with a denture			
I do not understand	1	11	5.21
I understand partially	2	75	35.55
I understand completely	3	125	59.24
Knowledge			
The healthcare facility that appropriates for making dentures			
Wrong	1	7	3.32
Right	2	204	96.68
Source of information and knowledge about denture			
1-2 sources	1	106	50.24
3-4 sources	2	90	42.65
5-6 sources	3	15	7.11
Type of the denture			
I do not know the type of denture	1	30	14.22
Understand 1-2 type of dentures	2	157	74.41
Understand 3-4 type of dentures	3	24	11.37
The appropriate method for denture care			
I do not understand	1	13	6.16
I understand how to take care of dentures.	2	198	93.84
Atitude			
The motivation for denture treatment			
Health education programs	1	76	36.02
Dentist	2	50	23.70
Teachers or schoolmates	3	7	3.32
Parents or siblings	4	49	23.22
Myself	5	29	13.74
Denture improve the performance			
No	1	45	21.33
Yes	2	166	78.67
Entrustment of denture fabrication to an unlicensed denture maker			
Yes	1	87	41.23
No	2	124	58.77
The willingness to clean the denture if the respondent has one			
I will clean it	1	8	3.79
I will not clean it	2	203	96.21

Material and Methods

A cross-sectional study was conducted at a junior high school located in the central region of Surabaya, East Java, Indonesia. A total sampling method were used in this study. The self-administered questionnaires were distributed to all 3rd grade students. Prior to the administration of the questionnaire, both the students and their parents or guardians were provided with detailed information about the study and asked to provide written informed consent. The questionnaire was divided into three sections: awareness, knowledge, and attitude. Responses were structured in a multiple-choice format and subsequently categorized for analysis. The collected data were systematically evaluated to determine whether they met the inclusion criteria. These criteria are as follows: 1) Participants must be students enrolled at the designated elementary school located in central Surabaya, 2) Students must complete the questionnaire, and 3) Participants are required to attend the oral health educational program.

The data collected in this study were analyzed using SPSS software to assess the reliability and validity of the questionnaire. After that the data distribution was evaluated using the Kolmogorov Smirnov test (P<0,05). The data were categorized into three categories (poor, fair, and good) according to the median. The questionnaire was administered prior to the oral health education program to minimize bias and accurately assess the participants' baseline knowledge of prosthodontic treatment. This approach ensured that the responses reflected their initial understanding, while still allowing the students to later receive correct and comprehensive information during the educational session.

Results

The total number of the students that enrolled in the 3rd grade of junior high school were 237 and the number of students who participated in this study was 227. The response rate for this study was 96.18 %. However, the total 16 students were exclude from this study because they did not complete the questionnaire. The student's participants consisted 54.50% (n=115) girls and 45.50% (n=96) boys. The average age for the patient were 14,91 years old with < 14 years are 16.10% (n=34), 15 years old 58.30% (n=144), and >15 years old was 15.60% (n=33). The result of the questionnaire was shown in the table 1. Before evaluating the data, the questionnaire was evaluated using the reliability test. The result of the realibilty test showed that the Cronbach's α was 0.426. Cronbach's α of 0.426 indicates that the internal consistency of the questionnaire is modest, suggesting that while the instrument captures the intended construct, certain items may benefit from refinement to enhance cohesiveness and reliability. The validity of the date showed that that the questionnaire items achieved acceptable item–total correlation values, supporting the appropriateness of the instrument for measuring the intended constructs (r>0.13098).

The awareness of the showed that mostly the students (38.86%) did not the regular visit for check up to the dentist because they only came to the dentist when they have the tooth complain. Among the students 38 students (18%) have a tooth loss on the permanent tooth and none of them use the denture to replace the missing tooth. They thought that replacing the tooth with a denture is required but not urgent (32.70%). However, most of them (59.24%) understand completely regarding the purpose of the replacing missing teeth with a denture.

In the knowledge section, it is showed that they had known (96.68%) the place where the healthcare facility that appropriate for making dentures. They had some of source of information to learn about the denture but mostly the students got the denture information from 1-2 sources (40.24%). The most common source knowledge about denture was from dentist and other medical profession (27.82%), social media (27.82%), parents or family (21.33%), printed communication media (9.90%), teachers or friends (9.56%), and textbook (3.58%). In total 30 students

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(14.22%) do not understand at all regarding the types of dentures and majority of them had known 1-2 types of dentures (74.41%). For those who understand the type of denture, the proportion of each type of denture was fixed denture (26.28%), implant-supported denture (25.64%), removable complete denture (24.68%), and removable partial denture (23.40%). Most of students also understanded the appropriate method for denture care (93.84%).

The evaluation for the attitude shows that the motivation for denture treatment was the majority from the health education program (36.02%) while only a small proportion were self-motivated (13.74%). However, they believed that the denture treatment can improve their performance and confidence (78.67%). Unfortunately, many students still entrust denture fabrication to an unlicensed denture maker (41.23%). Even though they understood the appropriate method for denture care but they were unwilling to clean their dentures (96.21%).

The data distribution of this study was not normal P<0,05. Therefore, according to the median result we categorized each section. The maximum total score for awareness was 15, with scores ranging from <9 classified as poor, 9-10 as fair, and >11 as good. The knowledge domain had a maximum score of 10, in which scores of <7 was categorized as poor, 7 as fair, and >8 as good. The attitude domain had a maximum score of 11, with scores of <6 classified as poor, 6-8 as fair, and >9 as good. The students' awareness, knowledge, and attitude regarding prosthodontic treatment were all categorized as fair, with mean scores of 10.2, 8.53, and 7.88, respectively.

Discussion

Early permanent tooth loss in adolescents can leads to functional problems such as impaired mastication, improper tooth alignment, and difficulties in pronunciation. Prosthodontic treatment can be successfully provided to address tooth loss not only in older adults but also in adolescents.6 Understanding the perspective of prosthodontic treatment during adolescence is crucial because this developmental stage adolescence vulnerability to socioeconomic risk factors and a higher likelihood of adopting unhealthy behaviors that may persist into adulthood forever. Gaining insight into tooth loss among adolescents also supports better clinical decision-making and helps evaluate the effectiveness of interventions, services, and oral health programs.[2]

This study was mainly participated in by the female students. These participations is consisted with the greater proportion of the female students in the 3rd grade of in that junior high school. The majority age of the participants was 15 years old aligning with the typical age distribution of the 3rd grade of the junior high school in Indonesia.

In this study, we found that most adolescents did not regularly check their dental condition. This finding is consistent with the Indonesian Family Life Survey-5 Which reported that the majority of Indonesian (84.6%) never visit dentist.[13] This is a typical condition in Indonesia, as Indonesians only visit the dentist when they have an oral problem. Oral disease is considered an unthreatening condition therefore routine checkups are uncommon in Indonesia.[14,15]

We also found that some of the participants have tooth loss problem and did not perform the prosthodontic treatment. The main cause of tooth loss among adolescents related to their caries experience, dental trauma, or periodontal disease. Most tooth loss occurred in the permanent first molars, which are particularly susceptible because they erupt earlier than other permanent teeth, making them more prone oral disease.[4] Although the majority of the participants understood that tooth loss needs to be replaced with a denture. However, they thought that the prosthodontic treatment is not an urgent matter since it is not a threatening disease. Moreover, the other reasons they did not undergo prosthodontic treatment might include be financial constraints, inadequate knowledge, fear of have the treatment, lack of time, and do not have any motivation.[11,12,16,17] The participant aware of the purpose using the denture. Evidence shows that younger respondents tended to prioritize aesthetic enhancement of their smile, while concerns about chewing efficiency were secondary. Conversely, in older age groups, the ability to chew properly emerged as the foremost issue.[7]

The evaluation of knowledge indicated that the participants knew the appropriate healthcare facility for making dentures. In Indonesia, the presence of unlicensed practitioners remains widespread, commonly known as tukang gigi. Tukang gigi have long served as an alternative source of dental care for individuals from lower- to middle-income groups. According to regulations issued by the Ministry of Health, their scope of practice is strictly limited to the fabrication and placement of removable acrylic dentures. However, in the realization that they perform procedures beyond these legal boundaries that lead to several serious problems for the patients by the government.[8] Despite of this, in the attitude section, the participants still entrust the denture fabrication to the unlicensed once as this might be more affordable compared with services provided by licensed dentists.

Sources of information and knowledge about dentures can be accessed in many ways. However, most participants learn about dentures from only one to two sources, with the primary sources are the dentist and social media. This is aligned with a previous study that mentions that the dentist was the most significant source of information regarding the prosthodontic treatment.[10] In the current digital era, social media become a prominent platform for disseminating health-related information. Its widespread accessibility

and interactive features enable innovative approaches to enhancing oral health awareness and promoting positive oral-health behaviours within the community.[18] However, these findings is contrasting with previous studies that reported that social media was the least preferred source of information regarding prosthodontic treatment. The earlier study suggested that information disseminated through social media often lacks adequate authenticity and credibility, thereby reducing trust to that information.[7]

Most students were familiar with only one or two types of dentures. The most commonly recognized option was fixed denture prostheses; however, the differences in recognition among the various denture types were not substantial. This study is contrasts with previous studies that reporting dental implants were the most widely recognized treatment option, followed by complete dentures, and then by crowns and bridges.[7] This is might be happened due to implant treatment has a high successful rate and the survival rate.[19,20] However, in other study the complete removable denture is the most well-known prosthodontic treatment.[16]

In this study we also evaluated the knowledge of about denture care. As the prosthodontic treatment does not end after the insertion but a long-term care. Most of the adolescence understand that the denture should be take care after the insertion. The knowledge is important because the low level of denture hygiene knowledge were significantly associated with how well they maintain their prostheses.[21] In contrast to their knowledge, the participant lacked the motivation to clean their denture. It may cause biofilm formation, induce denture stomatitis, degrade the material, cause halitosis, and increase the risk of pneumonia.[22]

Motivation can strongly influence an individual's thinking and decision-making, including decisions related to prosthodontic treatment. Choices regarding whether to seek the prosthodontic treatment can arise from both intrinsic motivation, which originates within the individual, and extrinsic motivation, which is influenced by external factors such as family, peers, environment, or social media.[23] In this study, we found that most participants' motivation to pursue prosthodontic treatment was predominantly driven by extrinsic factors, while intrinsic motivation played a comparatively smaller role.

In this study, the awareness, knowledge, and attitude toward prosthodontic treatment among adolescents were still at a fair level, indicating the need for improvement. One potential approach is through health education programs, which have been shown to enhance adolescents' awareness, knowledge, and attitude regarding prosthodontic care. However, this study has several limitations should be acknowledged. The study population was primarily composed of 14–15-year-olds, limiting the representativeness of the findings across the entire adolescent age range of 10–19 years. Additionally, the sample was relatively small and drawn from a specific geographic and socio-demographic context, which may restrict generalizability. Finally, data were collected via self-reported questionnaires, which are subject to reporting bias. Future research should include larger, more diverse populations and employ objective measures to more comprehensively evaluate adolescents' knowledge, attitudes, and behaviors regarding prosthodontic treatment.

Conclusion

Adolescents exhibited fair levels of awareness, knowledge, and attitudes toward prosthodontic treatment, indicating a need for targeted educational interventions. Structured health education programs may improve understanding, perception, and oral health behaviors related to prosthodontic treatment.

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