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Systematic Review

Psychosocial Aspects of Orthodontic Treatment Among Adolescents: A Systematic Review

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KEYWORDS

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ABSTRACT

Introduction: Orthodontic treatment aims not only to improve the patient's occlusion but also to provide an attractive physical appearance. Orthodontic treatment can be started in adolescence in certain cases. Adolescence is a phase of self-identity development where physical appearance plays an important role. Therefore, the patient's age must be considered because it is related to psychosocial factors that will determine the success of orthodontic treatment. This paper aims to provide an overview of the psychosocial factors influencing orthodontic treatment in adolescents, particularly regarding their desire to undergo orthodontic treatment.

Review: This review was conducted using electronic databases, including PubMed, EBSCOhost, and Scopus. The included studies focused on psychosocial factors considered in orthodontic treatment among adolescents. Relevant articles were selected and analyzed to identify psychosocial factors influencing orthodontic treatment in adolescents. Articles that meet the inclusion criteria are 7 articles on psychosocial impact, emotional well-being, self-esteem, motivation, and the patient's desire to undergo orthodontic treatment

Conclusion: Psychosocial aspects such as self-esteem and social influence, including social media, have an important role in motivating adolescents to undergo orthodontic treatment. Orthodontists need to understand a person's emotional and cognitive development because it affects how a person receives orthodontic treatment. Communication and using appropriate approaches by considering psychosocial factors will improve the success of orthodontic treatment.

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INTRODUCTION

Malocclusion can affect aesthetics and behavior, disrupting confidence and social skills and impacting quality of life.[1] Evaluation of orthodontic treatment needs should consider not only the severity of malocclusion but also the age group.[2] Chronological age is related to the stage of psychosocial development, but it can vary with the stages of development that are always constant. The social environment influences the stage of psychosocial development, shaping the dominant personality qualities at that stage. Each individual can adapt to the physical and sociocultural environment.[1]

Adolescence is a life phase in which the opportunities for health are great and future patterns of adult health are established. This stage is quite complex because many opportunities arise relating to others, and at the same time, physical conditions change, and academic responsibilities increase.[1] Peers are sometimes more important, and they start to distance themselves from family. In this phase, appearance is important in developing self-identity.[3] Adolescents seek orthodontic treatment because they believe that having a good dental position and an attractive smile will improve social perception and interaction. External influences due to encouragement from others, the environment, and culture, as well as internal influences of psychological factors and the desire to correct perceived defects, can affect the perception of dental appearance as well as the decision to seek orthodontic treatment.[1] Dental and facial aesthetics play an important role in shaping self-image, social interactions, and overall psychological well-being. The positive impact of orthodontic treatment on patients' quality of life has been well-documented. After completing orthodontic therapy, children, adolescents, and adults show improved body image and enhanced confidence in their appearance, which contributes to reduced anxiety in social situations and has a favorable effect on their self-esteem.[4]

Clinicians' challenge is to help patients perceive the situations around them more clearly, not to change their thoughts. Clinicians play a crucial role in assessing people's behaviors to evaluate and treat patients. Adults cannot expect young people to process and use knowledge in the same way because their cognitive abilities will vary depending on the stage of development. Clinicians need to understand patients' intellectual level.[1] Orthodontists must adapt to the phases of cognitive and emotional development that have been obtained and adjust their language to understand the concept of treatment.[1] This review aims to discuss the psychosocial factors as well as their impact on orthodontic treatment among adolescents.

REVIEW

The data were taken from an electronic literature search in PubMed, EBSCOhost, and Scopus regarding psychosocial factors on orthodontic treatment among adolescents. The articles were obtained in the last 10 years, from 2015 to 2025. The keywords used in the article search were "psychosocial factor AND orthodontic AND adolescent" or "psychosocial OR psychology AND orthodontic OR orthodontics". Inclusion criteria were research about psychosocial factors and orthodontic treatment, original research articles or experimental research, articles published between 2015 and 2025, English-based articles, and full text. Exclusion criteria were case reports, commentaries, letters to the editor, articles in languages other than English, abstract only articles

The database search was carried out using the relevant keywords. The initial search found 93

articles, and after removing duplicates, 88 articles were found. Screening was carried out based on the title and abstract, so 21 articles were eligible for assessment. Next, exclusion was carried out on articles that were not relevant after reading the full text, some of which were due to discussing dental trauma, psychosocial considerations in children, and research on patients with interceptive orthodontic devices. Afterward, 7 articles that fulfilled the inclusion criteria were obtained for review (Figure 1).

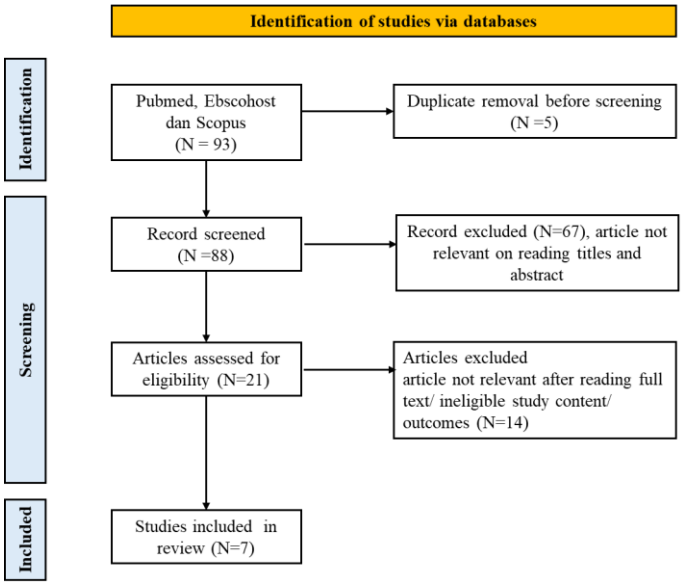

Figure 1. PRISMA flowchart

Orthodontic treatment can be started in the late mixed dentition period or at the beginning of the permanent dentition period.[2] The late mixed dentition period is after the eruption of all incisive teeth, around the age of 9-11 years, and the beginning of the permanent dentition is after the removal of all the deciduous teeth, at the age of 11-13 years.[5] Physical growth is the result of an interaction between genetic and environmental factors.[1] Each stage of development describes a "psychosocial crisis" influenced by the environment that shapes the dominant personality at that stage. Chronological age is related to the stage of psychosocial development and will influence how a person receives orthodontic care.[1]

The adolescent stage begins at puberty, and the primary focus during this time is to explore and establish personal identity. At this stage, physical, psychological, and hormonal changes will occur. An increase in testosterone in men and estrogen in women is the primary motivation to take risks, break out of family rules, and seek a new identity.[6] All life processes evolve and are influenced by interactions with family, peers, stories, and social media until a person forms their identity.[7]

Initiating orthodontic treatment at an early stage of maturation aims to prevent the formation of a negative self-concept. Self-concept is a relatively stable attitude that reflects how a person describes and evaluates their behavior. It includes perceptions and beliefs related to body structure and appearance, often referred to as body image. The concept of self-esteem is formed from three components: self-image, ideal self, and self-esteem.[7] Self-esteem is a complex phenomenon that does not depend on a single aspect and is

determined by several other elements in an individual's life.[8] Self-esteem is affected by age, disability, genetics, illness, physical ability, socioeconomic status, thought patterns, and life experiences.[9] DiBiase et al.,[3] Gasparello et al.,[4] and Vulugundam et al.[10] stated that individuals who have undergone orthodontic treatment tend to show higher self-esteem compared to those who have never received such treatment.[3,4,10] According to Vulugundam et al.[10] improvements in self-esteem were positively associated with mothers' education.[10]. However, there was no difference in self-esteem in patients with perceived orthodontic needs and those without perceived orthodontic needs.[3]

Physical appearance plays a significant role in the development of self-identity among adolescents. Adolescents who seek orthodontic treatment usually care about social acceptance, particularly within the school environment, where they spend their daily time. The study by Geoghegan et al. indicated that patients seeking orthodontic treatment consider factors such as misaligned teeth, bite issues, gaps, and tooth colour. Sixty-seven percent of these patients are not bothered by the possibility of wearing braces, because many of their family and friends have also undergone similar treatment.[11] Most adolescent patients expected a better dental appearance in the short-term and long-term after orthodontic treatment. In addition, better dental appearance was associated with psychosocial benefits, including improved dental self-confidence, positive psychological impact, improved self-worth, and positive social impact.[12] Malocclusion was statistically associated with emotional and social well-being.[13] Adolescents with definite malocclusion, severe malocclusion, and handicapped malocclusion have a greater impact on their emotional well-being than those without malocclusion or with mild malocclusion, which can lead to greater feelings of isolation and loneliness from an individual's peer group.[3,13] Dibiase et al. stated that a higher level of loneliness at school was reported by those aged 10-14 years with a more esthetically handicapping malocclusion as measured using IOTN-AC.[3]

Environmental influences are very important for adolescents to seek orthodontic treatment. Some people want to be like the person they see on television or on social media. Young people are very concerned about others' reactions and social media after completing orthodontic treatment. The number of "likes" on social media is important to them.[14] A study by Gasparello et al. indicated that Generation Z reported a higher impact of social media on their work or studies, regarding comparing their bodies or appearances and life experiences with others. They spent significantly more time on social media (4.42 hours).[4] The sense of belonging in the group becomes greater among adolescents, and a person realizes that they can exist outside the family.[1] The child's thinking at this stage is similar to an adult's and begins to understand the concepts of health, illness, and preventive care. The child's intellect should be regarded as equivalent to that of an adult, as they can communicate abstract ideas; however, they still express themselves egocentrically, believing that their thoughts align with those of others.[1] Longstaff et al. stated that adolescents actually enjoy having braces because they think it's going to be another step to becoming an adult. Interestingly, for certain people, the desire for braces as a kid was not due to treatment outcomes or dissatisfaction with their teeth. The day the fixed appliance was removed marked a significant turning point in their lives because it demonstrated their advancing maturity.[14]

Orthodontic treatment for adolescents aged 12 to 17 years is very challenging and will be more severe if this treatment is only due to parental wishes.[1] Parents had greater motivation for their children to have orthodontic treatment compared to their children's desire.[15] Geoghagan et al. stated that 12% of parents initiated orthodontic treatment for their children; their motivation behind seeking treatment for their child reflects their own beneficial experience of orthodontics. Parental expectations and understanding of the benefits of orthodontics for their child's appearance were largely realistic. They also hoped that orthodontic treatment could improve self-confidence and self-esteem.[11]

Adolescent patients understood the risks of orthodontic treatment, such as broken tools, ulcers, gingivitis, pain, problems with eating, and speaking. They also understood more complex orthodontic problems, such as the consequences of not receiving orthodontic treatment, demineralization and relapse, and root resorption, as well as their effects on health and quality of life.[16] Research by Longstaff et al. indicated that the pain and discomfort of fixed appliances are acceptable, and before commencing treatment, the young people knew this would be the case. They suffered pain, yet they tolerated it and accepted it as part of the treatment. They also looked forward to the opportunity to choose the color of elastomeric modules. At the beginning of the treatment, it felt painful, but as time went by, everything felt normal.[14] The majority of patients understood that braces would mean a dietary adjustment and an increased importance of tooth brushing.[11]

The orthodontist should provide parents and children with sufficient information regarding what to do during orthodontic treatment and advise parents to be more involved in the child's care. It is also important to keep the child motivated during the treatment so that the best results are obtained.[15]

CONCLUSION

Adolescence is a phase of self-identity development. Physical appearance plays an important role in developing self-identity and motivation to seek orthodontic treatment. Psychosocial factors such as self-concept, self-esteem, loneliness, social acceptance, and opinions of their friends and family affect their decision to undergo orthodontic treatment and determine the success of treatment.[14] The orthodontist is responsible for assessing the potential benefits of treatment for each patient and providing appropriate education to them.

Treatment goals should be planned appropriately by collecting information from the patient, followed by a comprehensive examination conducted by the clinician. [17] The efficacy of orthodontic treatment depends on the relationship between the doctor and the patient.[17] Orthodontists not only provide information to patients, but must also pay attention to what the patient understands and expects from the treatment.[18]

Effective communication is essential for explaining complex treatment plans.[17] This includes an empathetic and accurate assessment of the patient's demands and setting realistic expectations that encourage patients for long-term care.[19] Orthodontists' communication must align with the psychosocial development stage to ensure the treatment concept is understood, particularly by considering the patient's age, emotional maturity, and individual concerns regarding their dental health.

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