



## RESEARCH ARTICLE

### EVALUATION AND COMPARISON OF THE EFFECTS OF MALOCCLUSION ON SELF ESTEEM IN THE ADOLESCENTS

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#### ABSTRACT

**Introduction:** In the last decade, an increasing number of researches and studies focusing on the impact of oral deformities, malocclusion and illnesses on quality of life and self esteem have been published. Goal of this study was to evaluate the impact of malocclusion (protrusion) on the self esteem in adolescents.

**Aims and Objectives:** To evaluate and compare the effects of malocclusion on self esteem in adolescents.

**Materials and Methods:** The study sample consisted of 60 adolescents, 30 males and 30 females (mean age 18 to 24 years). All the adolescents were evaluated in terms of their degree of protrusion. Two groups were made, normal group and proclination group. Normal group was divided into 15 males and 15 females. Proclination group was divided into 15 males and 15 females. Rosenberg's Self-Esteem Scale was used to determine self-esteem and to relate between normal and proclination group. Comparison of the normal and proclination group was done. Self esteem index (SI) was calculated.

**Results:** T-test was used to analyze the results. Results indicated that there was significant difference between the proclination group and normal group with low SI in proclination group. There was insignificant difference between proclination males and normal males, with low SI in proclination males. There was significant difference between proclination females and normal females, with low SI in proclination females.

**Conclusion:** Proclination causes low self-esteem in adolescent females. For males, there was no significant difference in self esteem between the proclination and the normal group.

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## INTRODUCTION

Physical appearance is an important characteristic of the face. In sociology and psychology, self-esteem reflects a person's overall subjective emotional evaluation of his or her own worth. It is a judgment of oneself as well as an attitude toward the self. Self-esteem encompasses beliefs (for example, "I am competent", "I am worthy") and emotions such as triumph, despair, pride, and shame. In the mid-1960s, sociologist Morris Rosenberg defined self-esteem as a feeling of self-worth and developed the Rosenberg self-esteem scale (RSES), which became the most-widely used scale to measure self-esteem in the social sciences. Orthodontic therapy is normally started for cosmetic considerations. Dentofacial problems causing cosmetic impairment are detrimental because of their adverse effect on an adolescent's self esteem (Min-Ho Jung, 2010).

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Malocclusion represents only one dimension of the complex nature of oral health. However, malocclusion can affect self-satisfaction, and as a result, impair psychological and social functioning (Min-Ho Jung, 2015). The effects of low self esteem have been assumed to be damaging, there has been a particular interest in identifying its causes, and the hypothesis that orthodontic treatment will lead to higher self esteem or lack of treatment can lead to low self esteem in adulthood appears well grounded (William, 2007). The main benefits of orthodontic treatment relate to improvements of oral function and appearance that will lead to improved psychological and social well being (Sudaduang Gherunpong, 2006). The possible psychological repercussions and the effects of dentofacial deformities and their treatment on body image have been the subject of numerous studies (Priscila Tayah Garcia Espera et al., 2010). There has been considerable methodological research leading to the development of questionnaires to measure dimensions of quality of life that relate to oral health.

Theoretical models have been developed to link concepts of disease, dysfunction and disability to health, oral health and quality of life (de Oliveira, 2004). The purpose in this study was to evaluate the influences of malocclusion on adolescent's self esteem. The effects of proclination of teeth were measured.

**AIMS AND OBJECTIVES**

Evaluation and comparison of the effects of malocclusion on adolescent self esteem.

**MATERIALS AND METHODS**

The sample consisted of 60 adolescents aged 18 to 24 years of age. In the 60 adolescents 30 were males and 30 were females. The sample was divided into two group's i.e. normal group and proclination group. The normal group consisted 15 males and 15 females and proclination group consisted of 15 males and 15 females. Selection criteria for the adolescents were: (1) age between 18 and 24 years; (2) no craniofacial anomalies, including cleft lip and/or palate; (3) Class I molar relationship without spacing or noticeable facial asymmetry; (4) no missing or impacted teeth except third molars; (5) no reported medical problem or temporomandibular joint pain; (6) no orthodontic treatment experience; (7) no untreated caries or periodontal disease. Each adolescent signed a consent form and agreed to participate in the study.

To assess the psychological influences of malocclusion, Rosenberg's self esteem scale (Min-Ho Jung, 2010) was used (Fig 2). It has a Likert scale in which a positive or a negative response is weighed with a 4-point scale, ranging from "strongly agree" to "strongly disagree". This scale was originally developed for and sampled on 5024 high school juniors and seniors from 10 randomly selected schools in New York state<sup>1</sup> and has been used many times with proven reliability and validity for the general population and orthodontic patients<sup>1</sup>, it is simpler and more focused on self esteem than other scales related to self concept (Min-Ho Jung, 2010).

**Criteria for proclination group:**

Overjet more than 3mm

**Criteria for normal group:**

Average overjet (2-3mm) and overbite



**Fig.1 Measurement of overjet**

The questionnaire given to the adolescents was in the following pattern:

Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle SA. If you agree with the statement, circle A. If you disagree, circle D. If you strongly disagree, circle SD.

- 1.On the whole, I am satisfied with myself.  
SA A D SD
- 2.At times, I think I am no good at all.  
SA A D SD
- 3.I feel that I have a number of good qualities.  
SA A D SD
- 4.I am able to do things as well as most other people.  
SA A D SD
- 5.I feel I do not have much to be proud of.  
SA A D SD
- 6.I certainly feel useless at times.  
SA A D SD
- 7.I feel that I'm a person of worth, at least on an equal plane with others.  
SA A D SD
- 8.I wish I could have more respect for myself.  
SA A D SD
- 9.All in all, I am inclined to feel that I am a failure.  
SA A D SD
- 10.I take a positive attitude toward myself.  
SA A D SD

Scoring  
Q 1, 3, 4, 7, 10: SA=4, A=3, D=2, SD=1.  
Q 2, 5, 6, 8, 9: SA=1, A=2, D=3, SD=4.

**Fig 2. Rosenberg's self-esteem scale (Min-Ho Jung, 2010).**

The self-esteem questionnaire consisted of 10 questions;5 were positive, and 5 were negative. For each negative statement, the answer was counted and added to the total score. For each positive statement, the answer was subtracted from 5, and then the remainder was added. In this study, self-esteem was evaluated based on the self-esteem index (SI). The SI was calculated. By dividing the total score by 10. A subject with high self-esteem had a high SI score. The SI scores of each group were compared by using t-test and. Males and Females were compared separately.

**RESULTS**

The sample comprised of 60 adolescents of which were 30 males and 30 females. Table 1 shows the characteristics of the sample.

**Table 1.**

| GROUP        | GENDER | n  | SI          |
|--------------|--------|----|-------------|
| PROCLINATION | MALE   | 15 | 2.90 ± 0.33 |
|              | FEMALE | 15 | 2.27 ± 0.31 |
| NORMAL       | MALE   | 15 | 3.13 ± 0.26 |
|              | FEMALE | 15 | 3.16 ± 0.27 |

**Table 2.**

| GROUP  | P - VALUE  |
|--|------------|
| PROCLINATION GROUP V/S NORMAL GROUP ( Males & Females) | 0.000005*  |
| PROCLINATION MALES V/S NORMAL MALES                    | 0.087      |
| PROCLINATION FEMALES V/S NORMAL FEMALES                | 0.0000019* |

\*Statistically Significant Value P < 0.05

Table 1 shows the division of the sample. The samples are divided into two groups i.e. normal group which consisted of 15 males and 15 females and proclination group which consisted of 15 males and 15 females. Results were analyzed using T-test. It evaluated the self esteem index of both the groups. It showed that the self esteem index (SI) for proclination males was  $2.90 \pm 0.33$  and for proclination females was  $2.27 \pm 0.31$ . The self esteem index (SI) for normal males was  $3.13 \pm 0.26$  and for normal females was  $3.16 \pm 0.27$ . Table 2 show the comparison between the different groups, the value obtained after comparing the normal and proclination group was statistically significant ( $P < 0.05$ ). After comparing normal males and proclination males, the value obtained was insignificant. After comparing normal females and proclination females the value obtained was statistically significant.

## DISCUSSION

The smile has been reported to be the second most important facial characteristic associated with physical attractiveness, and previous research suggests that malocclusion might negatively affect self-satisfaction and impair social functioning. However, because there are many other factors that can influence psychological aspects, including characteristics of the hair, skin, eyes, body shape, and socioeconomic status, the psychological impact of a single factor can be limited (Min-Ho Jung, 2015). We assumed that the severe and easily noticeable features of malocclusion such as proclination would have significant psychosocial effect, and the results of this study supported our hypothesis. In this study there was evaluation and comparison of malocclusion on self esteem of adolescents, which showed that the self esteem index (SI) was less in the adolescents who had more proclination.

The appearance of the face plays an important psychosocial role in human life and interpersonal relationships. Furthermore, the features most commonly associated with facial attraction are the eyes and the mouth. They are key elements in social interactions and social and interpersonal success in establishing relationships. Research on appearance and beauty challenges the assumption that beauty is an arbitrary cultural convention (de Oliveira, 2004). The appearance of the mouth and the smile plays an important role in other peoples judgment of facial attractiveness. Previous surveys showed that most people believe dental appearance to be important in social interactions. However, the impact of dental or perioral appearance differs among various sex and age groups (Min-Ho Jung, 2010). The characteristics of malocclusion patients vary widely and, because of increased knowledge about orthodontic treatment and esthetic concerns, even some patients having a very mild malocclusion seek orthodontic treatment (Min-Ho Jung, 2015). Helm *et al.* (1985) also showed that malocclusion is more worrisome to women than to men (Helm *et al.*, 1985). The demand for orthodontic treatment is mainly motivated by concern about appearance and a desire to improve appearance. But there can be cultural or ethnic differences about ideal appearance or standards of beauty. The most frequently mentioned chief complaints of orthodontic patients are crowding, overjet, and overbite (Min-Ho Jung, 2015). The sample in the study was chosen according to the proclination of the adolescents in which the overjet of the adolescents was more than 3 mm and rest of the sample taken was normal overjet which is around 2 to 3 mm. After the comparison of both the groups there was low self esteem index in the proclination group.

There was more low self esteem index in the females as compare to males. The values obtained were highly significant in the females Table 2. Kurtz<sup>11</sup> observed that it is easier for women to describe their characteristics, either positive or negative, whereas men tend to provide the same general descriptions about themselves. Table 1 shows that the self esteem index in the proclination group was less as compare to the normal group. According to Table 1 and 2 there was significant difference between the proclination group and normal group with low SI in proclination group. There was insignificant difference between proclination males and normal males with low SI in proclination males. There was significant difference between proclination females and normal females with low SI in proclination females.

## Conclusion

- Proclination causes low self-esteem in adolescent females.
- For the males, there was no significant difference in self esteem between the proclination and the normal group.

## REFERENCES

- de Oliveira, C. M. and Sheiham, A. 2004. Orthodontic treatment and its impact on oral health-related quality of life in Brazilian adolescents. *Journal of Orthodontics*, Vol. 31, 20–27.
- Feu D, Miguel JA, Celeste RK, Oliveira BH. Effect of orthodontic treatment on oral health-related quality of life. *Angle Orthod*. 2013;83:892–898.
- Helm S, Kreiborg S, Solow B. Psychosocial implications of malocclusion: A 15-year follow-up study in 30-year-old Danes. *Am J Orthod* 1985;87:110-8.
- Jung MH, Heo W, Baek SH. Effects of malocclusion on the self esteem of female university students. *Korean J Orthod* 2008;38:388-96.
- Kelly JE, Harvey CR. An assessment of the occlusion of the teeth of youths 12–17 years. *Vital Health Stat* 11.1977:1–65.
- Kurtz R. Sex differences and variations in body attitudes. *J Consult Clin Psychol* 1969;33:625-9.
- Laurie McNamara, James A. McNamara, Marc B. Ackerman, and Tiziano Baccetti. Hard- and soft-tissue contributions to the esthetics of the posed smile in growing patients seeking orthodontic treatment. *Am J Orthod Dentofacial Orthop* 2008;133:491-9.
- Marisa Reichmuth, Keri A. Greene, M. Gabriela Orsini, George J. Cisneros, Gregory J. King, and H. Asuman Kiyak. Occlusal perceptions of children seeking orthodontic treatment: Impact of ethnicity and socioeconomic status. *Am J Orthod Dentofacial Orthop* 2005;128:575-82.
- Marshman Z, Robinson PG. Child and adolescent oral health-related quality of life. *Semin Orthod*. 2007;13:88–95.
- Min-Ho Jung An evaluation of self-esteem and quality of life in orthodontic patients: Effects of crowding and protrusion. *Angle Orthod*. 2015;85:812–819.
- Min-Ho Jung. Evaluation of the effects of malocclusion and orthodontic treatment on self-esteem in an adolescent population. *Am J Orthod Dentofacial Orthop* 2010;138:160.
- Orlagh Hunt, Chris Johnston, Peter Hepper, Donald Burden and Mike Stevenson. The influence of maxillary gingival exposure on dental attractiveness ratings. *European Journal of Orthodontics* 24 (2002) 199-204.

- Priscila Tayah Garcia Espera, Branca Heloisa de Oliveira, Marco Antonio de Oliveira Almeida, H. Asuman Kiyak, and Jose Augusto Mendes Miguel. Oral health-related quality of life in orthognathic surgery patients. *Am J Orthod Dentofacial Orthop* 2010;137:790-5.
- Sudaduang Gherunpong, Georgios Tsakos and Aubrey Sheiham. 2006. A socio-dental approach to assessing children's orthodontic needs. *European Journal of Orthodontics* 28 393–399.
- William C. 2007. Shawa Stephen Richmond, Pamela M. Kenealy, Anne Kingdon, and Helen Worthington. A 20-year cohort study of health gain from orthodontic treatment: Psychological outcome. *Am J Orthod Dentofacial Orthop*, 132:146-57.

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