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The Relationship of Dental Malformation with Bullying and the Level of Self-Esteem among a Sample of Adolescents in Amman– Jordan

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Abstract

Objectives :Dental deformities are associated with an unacceptable appearance and subsequent psychological effects. This is what the research found through work, and therefore they sought to identify the impact of this on the occurrence of bullying and the level of self-esteem.

Methods :The study sample included108 teenagers aged between 12-20 years who suffer from dental deformities, to identify the extent of their exposure to bullying, and to study the effect of this on their level of self-esteem. The sample was taken from the orthodontic clinic affiliated with the Royal Medical Services. The study scale consisted of two parts, one to measure bullying and the other to measure self-esteem applied to a sample of patients. The descriptive correlational method was used to achieve the purposes of the study.

Results :The results of the statistical analysis showed that adolescents who suffer from dental malformation are subjected to bullying, and they suffer from low self-esteem, the statistical analysis did not show statistically significant difference for the gender variable or the type of dental distortion in bullying or self-esteem.

Conclusions :As a result of the study sample suffering from dental deformities and its impact on their low level of self-esteem and their exposure to bullying, they need to obtain psychological counseling services that contribute to improving their level of self-esteem and raising the efficiency of their ability to self-assertive.

Keywords: dental malformation, bullying, self-esteem, adolescents, malocclusion, psychological counseling.

علاقة تشوه الأسنان بالتنمر ومستوى تقدير الذات لدى عينة من المراهقين في عمان/ الأردن

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ملخّص

الأهداف: ترتبط تشوهات الأسنان بمظهر غير مقبول، و يترتب على ذلك آثار نفسية. وهذا ما توصلت له الدراسة، وتهدف التعرف إلى مدى تأثير ذلك على حدوث التنمر وتقدير الذات.

المنهجية: شملت عينة الدراسة 108 من المراهقين الذين تتراوح أعمارهم بين 12-20 سنة، و يعانون من تشوهات الأسنان، للتعرف إلى مدى تعرضهم للتنمر، ودراسة تأثير ذلك على مستوى تقديرهم لذاتهم. تم أخذ العينة في عيادة تقويم الأسنان التابعة للخدمات الطبية الملكية. وتم تطبيق مقياس الدراسة المكون من جزأين أحدهما لقياس التنمر والآخر لقياس تقدير الذات لدى عينة من المراجعين، وتم استخدام المنهج الوصفي الارتباطي لتحقيق أهداف الدراسة.

النتائج: أظهرت نتائج التحليل الإحصائي أن المراهقين الذين يعانون من تشوه الأسنان يتعرضون للتنمر، ويعانون من تدني تقدير الذات، ولم يظهر التحليل الإحصائي فروق ذات دلالة إحصائية لمتغير الجنس أو نوع التشوه السني لدى المراهقين التنمر أو احترام الذات.

الخلاصة: نتيجة معاناة عينة الدراسة من تشوهات الأسنان، وأثرها في تدني مستوى تقدير الذات لديهم، وتعرضهم للتنمر، فإنهم بحاجة للحصول على خدمات إرشاد نفسي تساهم في تحسين مستوى تقدير الذات لديهم ورفع مستوى الذكاء لديهم. كفاءة قدرتهم على تأكيد الذات.

الكلمات الدالة: التشوهات السنية، التنمر، تقدير الذات، المراهقون، سوء الإطباق، الإرشاد النفسي.

Introduction and Literature Review:

Dental malformation is considered one of the important problems facing individuals because it has an impact on the health, psychological and social level, and this problem is associated with some variables such as ineffective social communication and the cases of bullying and may be the negative impact on the level of self-esteem, and this negative impact of dental deformation affects all individuals in all ages, and the negative impact of individuals increases in children and adolescence.

Malocclusion is one of the most common dental problems affecting individuals who suffer from it, and there are many factors that lead to malocclusion, such as genetics, congenital malformations, the environment and accidents, early tooth loss and caries. Class I skeletal malocclusion is characterized by a straight profile where the upper jaw and lower jaw are coordinated. Class II skeletal malocclusion is characterized by a convex profile and is likely due to a mandibular retrusion, a maxillary protrusion, or a combination of the two. The Class III pattern is associated with a concave profile which may be due to mandibular protrusion, maxillary retrusion, or a combination of Class I and Class II. (Ardan, Heswari& Alida, 2020)

Physical characteristics and aesthetic patterns are important in society, these patterns are observed in both childhood and adolescence, because integration and communication in the social group play an important role, people who are bullied often suffer from some physical and social characteristics with which they negatively differ from others., the most common general physical characteristics of bullying are weight, exaggerated height and strange face shape, given that the area of the teeth and the face contributes greatly to the general appearance of the face and that a harmonious smile plays an important role in the beauty of the face, and accordingly it seems reasonable to assume that the misaligned teeth and the lack of harmony between the jawbones upper and lower jaw or malocclusion, may be associated with bullying and malocclusion is a widespread public health problem and many studies have shown its negative association with quality of life, self-esteem and the prevailing social culture, and many researchers have pointed to the high prevalence of bullying among children and adolescents who they suffer from malocclusion and dental malformation especially the front teeth (Tristão, Magno, Pintor, Christovam, Ferreira, Maia & de Souza, 2020)

Bullying is described as a specific form of aggression with a difference in strength between the aggressor and others, where the more powerful individual repeatedly and deliberately causes harm to the weaker individual, there are different methods of bullying, which can be direct or indirect, direct bullying includes aggressive physical behaviors verbal, such as hitting or swearing; while indirect bullying is described as social exclusion, spreading rumors, and abuse of personal existence (Artese, 2019)

Among other aspects related to this context, Cherry (2021) referred to the subject of self-esteem which describes a feeling of personal worth. It also indicates the extent of the individual's self-esteem and satisfaction, and many factors contribute to this, including self-confidence, a sense of security, a sense of belonging and a sense of competence. Self-esteem tends to be at its lowest in childhood and increases during adolescence, as well as adulthood, eventually reaching a stable and lasting level, this makes self-esteem like the stability of personality traits over time.

Orthodontics reflects positively on individuals, and accordingly positively affects self-esteem, so the purpose of any clinical orthodontic treatment should be to achieve functional and aesthetic benefits for the patient, as well as potential effects on quality of life, it is important to note that orthodontic treatments have increased due to the frequent occurrence and prevalence of malocclusion, which is currently a public health problem. The impact of the malocclusion in the patient's daily life presents and may have limitations that affect the appearance of the face, effect on the patient's self-esteem, the appearance of the face plays an important role in the perception of attractiveness in the social sphere, and the adaptation of the person to the stationary environment affects you. Undoubtedly, these aspects are related to the increase in the demand for orthodontic treatments, which has seen a rise thanks to scientific and technological developments, various treatment techniques, equipment for diagnostics, and biomaterials and braces that allow personalized treatments to be performed on patients, with the potential to reduce treatment time. Orthodontic treatments for aesthetic reasons occupy a place of great importance in today's dentistry, as adolescents and adults long for or desire an aesthetically acceptable smile by themselves or their families and social circle, and as a result patients change in a positive way their well-being. (De Oliveira, 2017)

As for adolescence is the stage in which an individual moves from childhood to adulthood, and this stage includes some major changes of physical, mental, emotional, and social growth, and many of the physical, sexual, cognitive, social, and emotional changes that occur during this time can bring anticipation and anxiety to both the individual and his family and can understanding what to expect at different stages promotes healthy development through adolescence and into adulthood. Adolescents entering adulthood have a stronger sense of their individuality and can define their own values, they may become more focused on the future and base their decisions on their own hopes and ideals, friendships and romantic relationships become more stable, and they become more emotionally and physically separated from their families. However, many are re-establishing a strong relationship with their parents, taking them as an example to seek advice and discuss mature topics with them. (Allen, 2019).

Appearance impact in communication and interaction between individuals; the malocclusion has a negative impact on social relations, and this is reflected in the individual's idea of himself. On the other hand, low or negative self-esteem is a painful condition in which a person feels unworthy, incapable, and incompetent. Appearance of the teeth varies according to gender, and age groups, socioeconomic groups, and according to cultural standards of beauty. Accordingly, malocclusion is related to females more than males, and the appearance of the teeth plays a role in the occurrence of different psychological effects between the sexes in their perceptions of the appearance of the face and teeth. There is no doubt that children in lower social class families suffer 60% greater negative impact of malocclusion than those in higher social class families (Taibah&Al-Hummayani,2017)

Purpose of the study:

This study aimed to determine the relationship between dental malformation, bullying and the level of self-esteem among a sample of adolescents.

Study importance:

The importance of the study lies understanding basic problems that adolescents may face because they are suffering from tooth deformity such as bullying and low self-esteem, and this contributes to proposing a medical treatment intervention program for orthodontics, and providing counseling and psychological support services to them, especially since the adolescence stage is an important stage in which it is formed identity.

Study problem:

The problem of the study revolves around the fact that suffering from dental deformation is one of the most important problems in the field of dentistry, according to the World Health Organization, this becomes more important if the person who suffers from dental malformation is in adolescence, which is the most critical and sensitive stage in the lives of individuals, and in which personal identity is built and formed. Through the work of the two researchers in the field of psychological counseling and dentistry, they found that the problem of dental deformities has a significant relationship with self-esteem, the possibility of exposure to bullying, and low social acceptance.

Study Questions:

First: What is the degree of bullying experienced by a sample of adolescents suffering from dental malformation in Amman?

Second: What is the degree of self-esteem of a sample of adolescents who suffer from dental malformation in the city of Amman?

Third: Is there a statistically significant correlation at the level ($\alpha \leq 0.05$) between the degree of bullying suffered by a sample of adolescents who suffer from dental malformation in Amman and their self-esteem?

Fourth: Are there statistically significant differences at the level ($\alpha \leq 0.05$) in the level of bullying suffered by a sample of adolescents who suffer from dental malformation in the city of Amman due to the study variables (gender, Type of

malocclusion)?

Fifth: Are there statistically significant differences at the level ($\alpha \leq 0.05$) in the level of self-esteem among a sample of adolescents who suffer from dental malformation in the city of Amman due to the study variables (gender, Type of malocclusion)?

Next, a brief review of some literature related to the variables of the current study.:

The study conducted by Islam, Chadwick, Esgin & Martiniuk (2022) aimed to determine the relationship between bullying and dental health problems in a sample of 766 Australian children,

age range 10-15 years, using data from the LSIC study. Logistic regression analyzes with bivariate and mixed effect and levels, the results indicated that approximately 44% of them were subjected to bullying, and the percentage of bullying cases increased more in the countryside than in the cities, and the parents confirmed that the children's suffering from bullying is due to the distorted teeth.

Alves, Barbosa, Colares, Santos, Menezes & Godoy (2021) conducted a study aimed to assess the relationship between malocclusion and bullying in secondary school adolescents in Olinda/PE. The sample consisted of 236 students between the ages of 14 and 19 years of male and female. The data was collected by applying a scale to identify cases of bullying. 24.9% of the adolescents in the study reported being bullied. They are individuals who suffer from one form of malocclusion and the type of malocclusion was not statistically significant associated with bullying, and bullying is not associated with the presence or absence of malocclusion. The study recommended conducting more studies due to the importance of this topic.

Tristão, et al (2020) finished study which aimed to assess the status of malocclusion and bullying for children and adolescents. Data were collected from research published in the databases PubMed, Scopus, Lilacs/BBO and Web of, and from a review of the previous literature, the study aimed to observe school students of children and adolescents who suffer from malocclusion, data were collected and analyzed, as it was concluded that severe malocclusion or tooth loss in children and adolescents leads to bullying.

The study by each of the Avontroodt, Lemiere, de Llano-Pérula Verdonck, Laenen & Willems (2019) aimed to find out the degree of development of self-esteem through orthodontic treatment, and to study the evaluation of the relationship between self-esteem and need for orthodontic treatment, this study consisted of 326 adolescents (172 girls and 154 boys) aged 11-16 years. Respondents filled out questionnaires for the purpose of the study and were selected at the University Hospitals of Leuven, Belgium, where they all received orthodontic treatment. Self-esteem was assessed by Harter's test and the need for treatment was determined by Index of Need for Orthodontic Treatment (IOTN). Data were analyzed using multivariate linear models and Spearman's correlations. The results showed no evidence of the occurrence of self-esteem during Orthodontic treatment, and significant interaction between male and female, female decrease self-esteem, and male increase in self-esteem, in addition a negative relationship between self-esteem and the IOTN aesthetic component of self-assessment were also observed. Suggesting that self-esteem contributes as a stable build during orthodontic treatment. Sub-domains of self-esteem can be affected by age and gender. It was found that self-esteem and subjective need for orthodontic treatment are related to each other.

The study conducted by Herkrath, Vettore, de Queiroz, Alves, Leite, Pereira, Rebelo & Herkrath (2019) aimed to investigate the relationship between the need for orthodontic treatment and oral health-related quality of life (OHRQoL) in a sample of 12-year-old children. The study was also concerned with knowing the relationship between self-esteem and the shape of teeth, cross-sectional data were analyzed on 406 schoolchildren aged 12 years. Data on socioeconomic and demographic characteristics, dental pain, self-esteem, and OHRQoL were collected using questionnaires developed for this purpose. Orthodontic treatment was assessed through dental examinations, using the Dental Aesthetic Index (DAI). The results demonstrated the effect of self-esteem modification on the relationship between DAI and OHRQoL. Children with lower self-esteem scores had worse OHRQoL than those without significant osteopathic intervention. However, self-esteem did not affect the association between DAI and OHRQoL in children with greater osteopathic need (DAI score of ≥ 31) Self-esteem underestimated the effect of malocclusion on OHRQoL in children with simple malocclusion, self-esteem did

not have a positive effect for those with severe malocclusion and that self-esteem mitigates the effect of malocclusion on OHRQoL in children requiring simple orthodontic treatment.

Commenting on previous studies:

With a quick review of some previous studies, we find that some studies were concerned with the case of bullying and its relationship to tooth deformation, like Esgin & Martiniuk (2022), Alves, et al (2021), and other studies were interested in identifying the level of self-esteem and its relationship to tooth deformity, like Avontroodt, Lemiere, de Llano-Pérula Verdonck, Laenen & Willems (2019), and previous studies were similar that the age of the study samples was for childhood and adolescence, the current study was distinguished by examining the impact of dental deformity on exposure to bullying and the level of self-esteem, in addition to studying intermediate variables such as deformity pattern and gender.

Methodology:

The descriptive correlational method was used to achieve the purposes of the study.

Study Population:

The study population consisted of all patients attending a clinic at royal medical services-Amman-Jordan and their number reached 3,252 in 2021, the age group of the patients was 10-40 years old

Study sample:

The study sample was108 patients between the ages of 12-20 years, considering the patients' consent to the application of the study tools, table No. (1) shows a description of the

Table (1): Distribution of the sample members according to the study variables

No	Demographic Characteristics	Number	Ratio
	Gender		
1.	Male	33	30.6%
	Female	75	69.4%
	Age		
2.	12-14	36	33.3%
	15-17	57	52.8%
	18-20	15	13.9%
	Type of malocclusion		
3.	Type 1	55	50.9%
	Type11	38	35.2%
	Type111	15	13.9%

Study tools:

Bullying Scale:

The scale consists of ten items that measure behaviors that express a state of bullying, The scale was prepared after reviewing some relevant scales, such as: Child Adolescent Bullying Scale (CABS) by Strout, Vessey, Difazio& Ludlow (2018) and Bullying Scale by Muhopilah, Tentama & Yuzarion (2020)

validity of the internal construction:

The internal structure of the questionnaire statements is honestly meant: the consistency of the questionnaire's

paragraphs with the total score, meaning that the statement measures what it was designed to measure and does not measure anything else. Accordingly, the Pearson correlation coefficient was calculated between the degree of each statement and the total degree of the scale.

Table (2): Correlation coefficients of the scale items with the total score

No. Paragraph	correlation coefficient	No. Paragraph	correlation coefficient
1	.716**	6	.883**
2	.823**	7	.730**
3	.544**	8	.701**
4	.745**	9	763**
5	.736**	10	.691**

** Statistically significant at the significance level ($\alpha \leq 0.05$)

* Statistically significant at the significance level ($\alpha \leq 0.05$)

It is clear from Table (2) that all the correlation coefficients of the scale items with the total score are statistically significant at the level ($\alpha \leq 0.05$), which ranged between (.544 and .833), and all these values are statistically significant, and this indicates the consistency of the internal construction of the scale, and therefore the scale It consists of (10) paragraphs in its final form.

Constancy:

To ensure the stability of the bullying scale, the stability was calculated using the "Cronbach's alpha" coefficient, table (3) shows these results.

Table (3): Stability coefficient by Cronbach's alpha coefficient method for scale items

Scale	Cronbach Alpha Stability
Bullying	0.90

It is clear from table (3) that the Cronbach's alpha coefficient for the total score of the scale was (.90), and this indicates that the scale has a good degree of reliability that can be relied upon in the field application according to the Nani scale, which was adopted (.70) as a minimum stability.

Nunnally & bernstein (1994 264-265)

Scale correction key:

It was considered that the scale (Likert quadruple) used in the study should be graded according to the rules and characteristics of the scale as follows:

I totally agree	4
Agree	3
I do not agree	2

I don't agree at all	1

Based on the foregoing, the values of the arithmetic averages were dealt with according to the following equation:
The highest value - the lowest value of the answer alternatives divided by the number of levels, which is:
The highest value - the lowest value of the answer alternatives divided by the number of levels, which are:

$\frac{4-1}{3} = \frac{3}{3}$ =1 This value is equal to the length of the category,

low level is from 1.00 _ 2.00
Medium level is from 2.01_3.00
High level is from 3.01 - 4.00

Self-Esteem scale:

The scale consists of ten items that measure self-esteem, the scale was prepared after reviewing a related scale such as: Personal Growth Initiative Scale – II by Christine Robitschek, (2008), and Rosenberg's Self-Esteem Scale (1965)

Validity of the internal construction:

The internal structure of the questionnaire statements is honestly meant: the consistency of the questionnaire's paragraphs with the total score, meaning that the statement measures what it was designed to measure and does not measure anything else.

Accordingly, the 'Pearson' correlation coefficient was calculated between the score of each phrase and the total score.

Table (4): Correlation coefficients of the scale items with the total score

No Paragraph	correlation coefficient	No Paragraph	correlation coefficient
1	.712**	6	.765**
2	.698**	7	.700**
3	.682**.	8	.625**
4	.696**	9	.831**
5	.709**	10	.798**

It is clear from table (4) that all the correlation coefficients of the scale items with the total score are statistically significant at the level ($\alpha \leq 0.05$), which ranged between (.625 and .831), and all of these values are statistically significant, and this indicates the consistency of the internal construction of the scale, and therefore the scale consists of (10) paragraphs in the final form.

persistence:

To ensure the stability of the self-esteem measure, the stability was calculated using the "Cronbach's alpha" coefficient, table (5) shows these results.

Table (5): Stability coefficient by Cronbach's alpha coefficient method for scale items

Scale	Cronbach Alpha Stability
Self-esteem	0.89

It is clear from table (5) that the Cronbach's alpha coefficient for the total score of the scale was (.89), and this indicates that the scale has a good degree of reliability that can be relied upon in the field application according to the Nani scale, which was adopted (.70) as a minimum stability. (Nunnally & bernstein 1994 264-265)

Scale correction key:

It was considered that the scale (Likert quadruple) used in the study should be graded according to the rules and characteristics of the scale as follows:

I totally agree	4
Agree	3
I do not agree	2
I don't agree at all	1

Based on the foregoing, the values of the arithmetic averages were dealt with according to the following equation:
The highest value - the lowest value of the answer alternatives divided by the number of levels, which is:
The highest value - the lowest value of the answer alternatives divided by the number of levels, which are:

$\frac{4-1}{3} = \frac{3}{3}$ =1 This value is equal to the length of the category,

low level is from 1.00 _ 2.00
Medium level is from 2.01_3.00
High level is from 3.01 - 4.00

Study Procedures:

1. Reviewing the theoretical literature and previous studies about variables: tooth deformity, bullying and self-esteem.
2. Prepare the study scale and extract validity and reliability coefficients.
3. Applying the scale to the available sample of dental clinic auditors for orthodontic purposes.
4. Collecting and analyzing data, extracting results, discussing them, and including recommendations.

Results and Discussion:

This chapter includes a presentation of the results of an attempt to identify the degree of bullying suffered by a sample of adolescents who suffer from dental deformity Amman and the degree of their self-esteem and the relationship between them, after the two researchers collected data using the study tools, and in the light of the statistical processing of the study data, it was reached to the following results:

First: the results related to the first question, which is:

What is the degree of bullying experienced by a sample of adolescents suffering from dental malformation in Amman?

To answer this question, the arithmetic averages, and standard deviations of the responses of a sample of adolescents who suffer from dental malformation in Amman were calculated on the scale of the degree of bullying, and the degree of bullying was also calculated, table (6) shows this.

Table (6): Arithmetic averages and standard deviations of the responses of a sample of adolescents suffering from dental malformation in the city of Amman on the scale of the degree of bullying

No	Paragraph	Average arithmetic	Standard deviation	Degree
1	My colleagues always leave me	3.57	0.66	High
2	I can't defend myself	3.54	3.39	High
3	I feel uncomfortable when I am with my friends	3.39	0.91	High
4	I'm getting ridiculed by my friends	3.35	0.85	High
5	Colleagues express my ugly appearance	3.31	0.88	High
6	My friends call me funny names	3.19	0.97	High
7	I can't do what I like for fear of my colleagues' comments	3.16	0.96	High
8	I usually get taunted by my colleagues.	3.15	0.88	High
9	I feel uncomfortable when dealing with my colleagues.	3.12	0.97	High
10	I suffer from the interference of others in my life.	3.09	0.91	High
Total degree of bullying		3.29	0.64	High

Table (6) indicates that the level of bullying for all paragraphs was high, and the averages of the paragraphs ranged between 3.57 and 3.09, noting that the general average of bullying was 3.29.

These results showed that the level of bullying among a sample of adolescents with dental deformities was high, this is a logical result, as young people who suffer from dental abnormalities, especially the front teeth, suffer from an unattractive face shape that may be repellent. It is known that the external appearance and body shape are of great importance to individuals, especially in the adolescence stage .This result is like the results of previous studies such as the study of Islam et al. (2022), which indicated the effect of dental deformity on exposure to bullying, this result is also like the findings of a study by Tristão, et al (2020), which confirmed that children and adolescents who are they face the bullying because of dental deformity.

Second: What is the degree of self-esteem of a sample of adolescents who suffer from dental malformation in Amman?

To answer this question, the arithmetic means and standard deviations of the responses of a sample of adolescents suffering from dental malformation in the city of Amman on the self-esteem scale were calculated. Table (7) shows this.

Table (7): Arithmetic averages and standard deviations of the responses of a sample of adolescents suffering from dental malformation in the city of Amman on the self-esteem scale.

No	Paragraph	Average arithmetic	Standard deviation	Degree
I feel ashamed of social events because of the shape of my teeth.		2.06	1.10	Medium
2	I can't show my photos on Facebook	1.96	1.04	Low
3	I face more difficulties than others	1.93	0.92	Low
4	I feel unable to complete many tasks	1.79	0.83	Low
5	I don't hear compliments about my appearance from others	1.78	0.91	Low
6	I have no ability to influence others	1.75	0.84	Low
7	I Don't hear likes from friends.	1.71	0.79	Low
8	I miss the praise of others.	1.56	0.77	Low
9	I can't build friendships.	1.52	0.78	Low
10	I can't create happiness for my family.	1.50	0.79	Low
Total score for self-esteem		1.75	0.63	Low

Table (7) shows that the general average of total score for self-esteem was low with an arithmetic mean of (1.75), while the arithmetic averages of the items ranged between (1.50 and 2.06)

These results showed that the level of self-esteem of a sample adolescent suffering from dental deformity was low, this study is consistent with the prevailing idea that self-esteem is a result of experiences of success, excellence, and social acceptance, and that risk factors for low self-esteem because of the individual's suffering from rejection and lack of acceptance, and one of the manifestations affecting the shape of the face which is deformed teeth. This result is like the results of many previous studies such as the study of Aggarwal, Kaur & Mathur (2017) which found that suffering from dental deformity leads to a decrease in the level of self-esteem.

Third: Results related to the answer to the third question, which is:

Is there a statistically significant correlation at the level ($\alpha \leq 0.05$) between the degree of bullying suffered by a sample of adolescents who suffer from dental malformation in Amman and their self-esteem?

To answer the fifth question, Pearson correlation coefficients were extracted between the degree of bullying experienced by the study sample and their self-esteem. Table (8) illustrates this.

Table (8): Pearson's correlation coefficients between the degree of bullying experienced by the study sample and their self-esteem.

Scale	Self- Esteem Score	
	Pearson Correlation Coefficient	Significance level
Degree of bullying	-.832-**	.000

** Statistically significant at the significance level ($\alpha \leq 0.05$)

It appears in table (8) that there is a statistically significant correlation at the level ($\alpha \leq 0.05$) between the degree of bullying suffered by a sample of adolescents who suffer from dental deformity in Amman and low self-esteem, where the value of the Pearson correlation coefficient (-. 832), and it is clear from the table that the relationship is inverse, this indicates that increased bullying leads to low self-esteem.

These results showed that increasing bullying towards adolescents with dental deformity leads to a decrease in their self-esteem, this result is consistent with the fact that life experiences affect self-esteem, and since the experience of being bullied is a negative personal experience, it is expected that the self-esteem of adolescents who are subjected to bullying will decrease. Just as the group of comrades in adolescence is a reference group for the adolescent, it is expected that his psychological condition will be negatively affected as a result of the tense and insecure relationship with the comrades, this result is similar to what was stated in the study of Avontroodt et al. (2019), which examined the relationship between low self-esteem and exposure to bullying as a result of distorted teeth, and is also similar to the study of Gatto et al. (2017), which found that low self-esteem in adolescents is associated with bullying in adolescents

Fourth: Are there statistically significant differences at the level ($\alpha \leq 0.05$) of bullying suffered by a sample of adolescents who suffer from dental malformation in Amman due to the study variables (Gender, Type of malocclusion)?

To answer this question, the arithmetic averages, and standard deviations of the responses of a sample of adolescents suffering from dental deformity in Amman on the bullying scale were calculated according to the study variables, where the independent samples test (T) was used to determine the significance of the differences according to the gender variable. One way ANOVA was used to determine the significance of the differences according to the evaluation reason variable, below is an overview of these results related with Gender Variable:

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Table (9): Arithmetic averages, standard deviations, and t-test for independent samples of the responses of the study sample on the scale of bullying according to the gender variable

Gender	Number	Arithmetic mean	standard deviation	T value	freedom	Statistical significance
Male	33	0.71	0.71	-0.871	106	0.385
Female	75	0.61	0.61			

* Statistically significant at the significance level ($\alpha \leq 0.05$)

It appears in table (9) that there are no statistically significant differences at the level ($\alpha \leq 0.05$) in the responses of the study sample on the scale of bullying according to the gender variable, where the value of (t) was (-0.871) with a significance level of (0.385).

About the variable of the type of distortion, table No. (10) shows the arithmetic averages and standard deviations.

Table (10): Arithmetic averages and standard deviations of the responses of the study sample on the bullying scale according to the type of malocclusion variable

Type of malocclusion	Number	Arithmetic mean	Standard deviation
1	55	3.39	0.50
2	**38**	**3.18**	**0.70**
3	**15**	**3.16**	**0.88**

Table (10) indicates that there are apparent differences between the arithmetic averages of the responses of a sample of adolescents who suffer from dental deformity in the city of Amman on the scale of bullying according to the variable of the type of malocclusion variable, and to determine whether the differences between the means are statistically significant at the level ($\alpha \leq 0.05$) Unilateral variance, and the results came as shown in the table (11):

Table (11): The results of the one-way analysis of variance differences in the responses of the study sample on the bullying scale according to the type of malocclusion variable

Variance	Sum of square	Degree of freedom	Mean squares	F value	Statistical significance
Between groups	1.300	2	0.650	0.405	1.606	0.206
Within groups	42.501	105				
Total	43.802	107				

It appears in table (11) that there are no statistically significant differences in the level of bullying suffered by a sample of adolescents who suffer from dental deformity in the city of Amman due to the type of malocclusion variable, where the value of (P) reached (1.606) and at the level of significance (0.206).

This results showed that there were differences, but not statistically significant, for the emergence of bullying according to the gender variable and the type of malocclusion, this result indicates that bullying occurs regardless of whether the individual is male or female, and that any form of tooth deformity is one of the reasons for bullying, this means that exposure to bullying occurs with males and females alike, and that suffering from bullying is associated with deformed teeth and not with gender differences. As for malocclusion, it negatively affects the shape of the body, regardless of the type of deformity, and leads to bullying, this result contradicts the findings of Avontroodt et al. (2019) which indicated that there are statistically significant differences in the emergence of bullying according to gender.

Fifth: Are there statistically significant differences at the level ($\alpha \leq 0.05$) in the level of self-esteem among a sample of adolescents who suffer from dental malformation in Amman due to the study variables (gender, type of malocclusion variable)?

To answer this question, the arithmetic averages, and standard deviations of the responses of a sample of adolescents suffering from dental deformity in the city of Amman were calculated on the self-esteem scale according to the variables of the study, where the t-test of the independent samples was used to determine the significance of the differences according to the gender variable. One way ANOVA was used to determine the significance of the differences according to the type of malocclusion variable. The following is a presentation of these results.

Table (12): Arithmetic averages, standard deviations, and t-test for independent samples of the responses of the study sample on the self-esteem scale according to the gender variable

Gender	Number	Arithmetic mean	standard deviation	T value	freedom	Statistical significance
Male	33	1.80	0.71	0.493	106	0.623
Female	75	1.73	0.60			

* Statistically significant at the significance level ($\alpha \leq 0.05$)

It appears in Table (12) that there are no statistically significant differences at the level ($\alpha \leq 0.05$) in the responses of the study sample on the self-esteem scale according to the gender variable, where the value of (t) reached (0.493) and the level of significance (0.623).

Table (13): Arithmetic averages and standard deviations of the responses of the study sample on the self-esteem scale according to the type of malocclusion variable

Type of malocclusion	Number	Arithmetic mean	Standard deviation
1	**55**	**1.64**	**0.55**
	38	**1.87**	**0.62**
2	**15**	**1.87**	**0.88**
3			

Table (13) indicates that there are apparent differences between the arithmetic averages of the responses of a sample of adolescents who suffer from dental deformity in the city of Amman on the scale of self-esteem depending on the type of malocclusion variable, and to determine whether the differences between the means are statistically significant at the level ($\alpha \leq 0.05$) One-way analysis of variance, and the results are as shown in the table (14):

Table (14): The results of the one-way analysis of variance differences in the responses of the study sample on the self-esteem scale according to the type of malocclusion variable

Variance	Sum of square	Degree of freedom	Mean squares	F value	Statistical significance
Between groups	1.426	2	0.713		
Within groups	41.321	105	0.394	1.812	0.168
Total	42.748	107			

* Statistically significant at the significance level ($\alpha \leq 0.05$)

It appears in table (14) that there are no statistically significant differences in the level of self-esteem among a sample of adolescents who suffer from dental deformity in the city of Amman due to the type of malocclusion variable, where the value of (P) reached (1.812) and at a level of significance (0.168).

The results showed that there were no statistically significant differences in the level of self-esteem due to the gender variable and type of malocclusion variable, this result indicates that low self-esteem in a sample of adolescents is associated with dental deformity in general, and there are no differences between males and females, this indicates that the self-esteem, whether low or high, is not affected by whether the individual is male or female, and this is a logical result because self-esteem is related to other major factors such as experiences of success or failure, the level of self-confidence, and self-satisfaction, and that tooth deformity, regardless of the type of deformity, causes low self-esteem, this result differs from what was found by the study of Gatto et al. (2017), which found the results indicated that there was a statistically significant relationship between self-esteem and the variables: gender, readiness for orthodontics to improve appearance.

Relationship between current study and previous studies:

The current study is like the study of Islam et al. (2022) in terms of studying the relationship between dental deformity and exposure to bullying, and reached a similar conclusion that children and adolescents who suffer from dental deformity are subjected to bullying, except that the age group of the current study sample is from 12-20 years while the study Islam et al. were of the age group of the sample from 10-15 years

The current study is like the study of Alves et al. (2021) which is to identify the relationship between malocclusion and exposure to bullying. However, the number of members of the current study is 108 in the age group 12-20 years, and the result of the study indicated that there is a relationship between dental deformity and bullying, but the study of Alves et al (2021) number of sample members was 236, aged 14-19 years, and it did not find that there is a causal relationship between bullying and tooth deformity.

There is also a similarity between the current study with the study of Tristão, et al (2020), which examined the relationship between bullying and dental deformity, and the target group was children and adolescents, however, the current study used the descriptive approach and the study of Tristão, et al (2020) the authors worked on collecting and analyzing data related to the subject of the study from global databases.

About the study of Avontroodt et al. (2019) it included a sample of adolescents with an age group of 11-16 years, and the number of sample members was 326. The aim of the study was to identify how self-esteem grows and develops in a sample of adolescents who suffer from dental abnormalities. Data was collected by filling out the scale. From auditors to dental clinics, which is like the current study.

The current study is like the study of Herkrath et al. (2019) which examined the effect of tooth shape on self-esteem, on the other hand the study of Gatto et al. (2017) find that it reached a conclusion that there is a statistically significant effect of low self-esteem and the need for orthodontics, which is like what the current study found.

Conclusions and Recommendation:

The results of this study indicated that adolescents, male or female, who suffer from deformities, regardless of the nature of the deformity, face bullying from peers and suffer from low self-esteem, Therefore, the study recommends:

- Providing psychological counseling services for adolescents suffering from dental deformity.
  improving self-concept for the purpose of raising the level of self-esteem and training in self-assertiveness, to efficiently confront cases of bullying.
- Preparing and distributing brochures for parents about the importance of medical intervention to treat dental deformity.
- Preparing prospective studies on other psychological effects of dental abnormalities, for other groups and in other areas

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