

Evaluation of Orthodontic Patient Satisfaction in Buraidah City, Al-Qassim, Saudi Arabia

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ABSTRACT

Introduction: The goal of orthodontic treatment is to produce a normal or ideal occlusion that is morphologically stable, aesthetically and functionally well-adjusted. However, there is a large variation in treatment outcome because of the severity and type of malocclusion, treatment approach, patient cooperation, and growth and adaptability of the hard and soft tissues. Given this, there are a number of factors that may influence patient satisfaction; this includes physical comfort, emotional support, patient expectations and respect for their preference. The aim of the study was to assess the level of satisfaction of orthodontic patients after the treatment.

Material and methods: This study design involved a cross-sectional study of 85 male and female participants from Buraidah City, Saudi Arabia.

Results: Study show that a higher percentage of the participants reported that self-motivation was the main reason to go and see the orthodontist. Out of the total 85 participants, a significantly high percentage of female patients reported that aesthetics was the main reason for seeking orthodontic treatment with more than half of the participants saying that they were very satisfied. Furthermore, 58% of the participants reported that orthodontic treatment improved their confidence and communication skills with no complications during the treatment.

Conclusion: The overall response to the questionnaire revealed that, in general, patients who undergone orthodontic treatment remained satisfied with their facial aesthetics in a long-term period after the treatment was done.

Keywords: Orthodontics, Aesthetics, Patient satisfaction

fect on self-esteem.⁵ Another research indicated that a high self-esteem could be related to orthodontic concern.¹

The major reason behind opting for orthodontic treatment is to improve the facial form and aesthetics.^{1,2} The major challenge in the field of Orthodontics is that the clinician is expected to correct the facial form as a result of improper dental occlusion as well as the skeletal pattern.

The maintenance of dental alignment after orthodontic treatment has been and continues to be a challenge to the orthodontic profession. Usually, the goal of orthodontic treatment is to produce a normal or so-called ideal occlusion that is morphologically stable and aesthetically and functionally well-adjusted. There is, however, a large variation in treatment outcome because of the severity and type of malocclusion, treatment approach, patient cooperation, and growth and adaptability of the hard and soft tissues.⁶

The responsibility of assessing the quality of health care is in the hands of the patient, clinician or the parents. Parental feedback regarding the treatment may be clouded by past experience. So, The Clinician should take in to account the Parent as well as the child's feedback and judiciously use it.⁷ The satisfaction of patients relies on the physical basis, emotional basis and in satisfying their own expectations regarding their appearance.⁸⁻¹⁰ Relying only on Clinician's judgement may not be reliable and valid in all cases.¹¹ It is now evident that patient satisfactory measures should include criterias that are important to the patient to have a positive feeling about their appearance.¹²

Therefore, the aim of the study is to assess the level of satisfaction of orthodontic patients after the completion of the treatment.

MATERIAL AND METHODS

The research design was a cross-sectional study involving 85 male and female participants from Buraidah City, Saudi Arabia. An anonymous pilot self-administered questionnaire was distributed amongst different private and governmental orthodontic clinics. The questionnaires were in Arabic language and were filled out by orthodontic patients. The forms were gathered by an assigned person in each clinic then it

INTRODUCTION

Research suggests that an important motivational factor for orthodontic treatment is improved dental facial appearance.¹ The relationship between physical appearance and perception of an aesthetic deviation, and the impact of such a deviation on self-esteem and body image are important issues in determining the benefits gained from orthodontic treatment. Attention should be given to the specific occlusal and aesthetic deviations that are a major concern to the patients, and assumptions based purely on the general occlusal condition should be avoided.²

Furthermore, a variety of social, cultural, psychological factors, and personal norms influence perception of physical attractiveness.³ Studies in social psychology indicate that physical attractiveness plays a major role in social interaction and influences the impression of an individual's social skill.⁴

As orthodontic treatment improves facial appearance, it is assumed to increase self-worth. However, this hypothesis is difficult to verify. A certain study on self-concept perception during orthodontic treatment showed no long-lasting ef-

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was collected by the researchers.

The criteria needed to answer the questionnaire are based on the patient's duration of the treatment. Patients are eligible to answer only if they are already in the final months of the treatment. The duration of the study was during the months of January to February 2013.

STATISTICAL ANALYSIS

Statistical analysis was done in SPSS program version 16 in which frequency measurement and Chi-Square Test were used. The results of these tests enabled the researchers to make comparisons between male and female participants and come up with conclusions that will be relevant to the study.

RESULTS

Out of the 200 questionnaires that were distributed in Buraidah City, Qassim district, 85 forms were returned back which gives an overall response of 42.5%. This includes 37 males and 48 females as seen on Table 1. There are five categories that were used to create an age interval in which a majority of the respondents are between 15-20 years old.

		Gender		Total
		Male	Female	
Age	15-20	12	24	36
	20-25	15	17	32
	25-30	9	6	15
	More than 30	0	1	1
	Missing	1	0	1
Total		37	48	85

Table-1: Age Interval

		Gender		Total
		Male	Female	
Who Encouraged you to start the orthodontic treatment?	Dentist	2	4	6
	Parents	3	2	5
	Friends	6	8	14
	Myself	26	33	59
	Others	0	1	1
Total		37	48	85

Table-2: Motivation for seeking orthodontic treatment.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.586(a)	4	.811

		Gender		Total
		Male	Female	
Mainly reported reason to do orthodontic treatment	To improve aesthetics	33	48	81
	To improve function	2	0	2
	To improve speech	0	0	0
	For fashion	2	0	2
Total		37	48	85

Table-3: Reason for orthodontic treatment

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.445(a)	2	.066

When the researchers asked about their motivation and encouragement to start with an orthodontic treatment, 69% of the participants stated that self-motivation was their primary reason. Table 2 shows the summary of the results and it can be concluded that there is no statistical difference between the responses of male and female participants.

The next question asks for the participant's main reason in starting with an orthodontic treatment. 95% of them answered that they want to be aesthetically appealing while the remaining percentage chose functionality and improved speech.

The next seven questions ask about the level of satisfaction gained by orthodontic patients after the treatment. The results are summarized in Table 4.

In response to their level of satisfaction for the overall treatment, 91% of the participants showed that they were either very satisfied or simply satisfied. The remaining percentage felt dissatisfied because the occlusion of their teeth were unlike what they had initially expected while the other reason shows their disappointment in feeling that their teeth were much better before than after the treatment.

When it comes to their overall appearance after the treatment, 86% showed their approval while 7% disapproved of the result because they felt that the outlook of their face was not compatible with their teeth.

Moving on to the next question, 88% of the participants felt that they experienced a significant difference with the way they smile while 5% felt no significant change.

The two questions below seek to determine the impact of orthodontic treatment when it comes to the level of their

		Gender		Total
		Male	Female	
Level of satisfaction in regard to overall treatment	Very Satisfied	22	28	50
	Satisfied	12	15	27
	Unsatisfied	1	4	5
	Very much Unsatisfied	1	1	2
	Missing	1	0	1
Total		37	48	85
Level of satisfaction in regard to overall facial appearance after treatment	Very Satisfied	16	23	39
	Satisfied	15	19	34
	Unsatisfied	2	4	6
	Very Unsatisfied	0	0	0
Total		37	48	85
Level of satisfaction in regard to smile after the treatment.	Very Satisfied	17	24	41
	Satisfied	16	18	34
	Unsatisfied	2	2	4
	Very Unsatisfied	0	0	0
Total		37	48	85

Table-4: Satisfaction of orthodontic patients after treatment.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.471(a)	4	.650
	1.665(a)	3	.645
	.565(a)	3	.904

self-confidence and communication skills improvement. A majority of the participants (58%) reported a positive answer stating that orthodontic treatment improved their confidence level while more than half of the participants (51%) agreed that orthodontic treatment improved their ability to communicate effectively.

The next question asks the respondents if they are willing to undergo orthodontic treatment should they ever go back in time. This question serves as the key in evaluating the general satisfaction status of the patients. 60% of the respondents confirmed that they are willing to do it again and this is a good indicator that they are generally satisfied with the treatment they received. 30% remain undecided while 8% would rather not undergo the same treatment

The question in table 7 aims to determine how a person's orthodontic treatment is accepted by their peers. Out of the total participants, 26 of them felt that their orthodontic treatment negatively affected the relationship that they have with their friends while 35 of them did not see it as an annoyance. When it comes to the noise that they encountered, 54% claimed that the duration of the treatment was the most difficult to endure and this is followed by TMJ and teeth pain with over 14%. Not far from it is the regular appointment (13%) while the last few reasons are shape of the orthodontic, difficulty of speech and the expenses paid for the treatment, respectively.

The next six questions focuses on the complications of orthodontic treatment as perceived by the patients and these are used to evaluate the satisfaction that they received. Using statistical tests, none of the answers in Table 9 revealed a significant result to the complication of orthodontic treatment while minorities of the respondents think that caries and periodontal diseases exist after the treatment aside from some discolorations in their teeth.

DISCUSSION

In general, high levels of satisfaction with their teeth fol-

lowing an orthodontic treatment have been reported in many other studies.^{13,14} The present study found out that 58% of the participants were very satisfied and 40% were satisfied with the overall result after the treatment. Al-Omiri and Alhajja reported that 34% of subjects were totally satisfied¹³ whereas Larsson and Bergsröm reported that the satisfaction rate was 74%.¹⁵ Birkeland et al. reported a high degree of satisfaction with orthodontic treatment results (95.4%).¹⁶ Al-Omiri and Alhajja's study found that only 4% of patients treated with orthodontic were dissatisfied with their teeth after treatment¹³, and the present study found that only 5 of the patients were dissatisfied with their overall treatment results. Hence, it should be noted that the rates of dissatisfaction are fairly similar, despite differences in treatment location. Looking at gender differences, some studies reported that gender is not a major factor in dental satisfaction.^{13,15,17} Others show that females tend to be more concerned about their appearance and thus find a greater need for this treatment as compared to males.^{18,19} Moreover, Phillips et al found that the expect-

		Gender		Total
		Male	Female	
Did orthodontic correction improve your self-confidence level?	Yes, Of Course	23	26	49
	I think that	10	14	24
	I don't think	1	2	3
	Never	1	4	5
	No	2	2	4
Total		37	48	85
Did orthodontic correction improve your communication skills?	Yes, Of Course	19	24	43
	I think that	12	12	24
	I don't think	1	5	6
	Never	2	3	5
	Missing	3	4	7
Total		37	48	85

Table-5: Impact of Orthodontic treatment

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.204(a)	4	.698
	1.587(a)	4	.811

		Gender		Total
		Male	Female	
If you were in a situation before doing the orthodontic treatment, Would you like to do it again?	Yes, of Course	23	28	51
	I think so	11	14	25
	I don't think so	2	5	7
	Never	0	0	0
	Missing	1	1	2
Total		37	48	85

Table-6: General satisfaction

		Gender		Total
		Male	Female	
Did orthodontic treatment affect your relation with friends negatively?	Yes, Of course	14	12	26
	Sometimes	3	7	10
	Never	16	19	35
	Missing	4	10	14
Total		37	48	85

Table-7: Complication of orthodontic treatment perceived by patients

		Gender		Total
		Male	Female	
What is the most difficult thing during your orthodontic treatment?	Duration of the treatment	17	29	46
	Orthodontic braces	3	5	8
	Difficulty attending appointment	6	5	11
	Teeth and TMJ pain	7	5	12
	Difficulty in speech	1	2	3
	Expensive	1	2	3
	Others	1	0	1
	Missing	1	0	1
	Total		37	48

Table-8: Noises in Orthodontic treatment

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.388(a)	7	.613

		Gender		Total
		Male	Female	
Did you feel pain or sounds in TMJ?	Yes, Of Course	1	2	3
	I think that	2	3	5
	I don't think	12	13	25
	Never	22	27	49
	Missing	0	3	3
Total		37	48	85
Did you have a caries or periodontal problem after treatment?	Yes, Of Course	11	6	17
	I think that	10	16	26
	I don't think	10	9	19
	Never	6	16	22
	Missing	0	1	1
Total		37	48	85
Did you feel any difficulty in mouth opening after treatment?	Yes, Of Course	1	1	2
	I think that	5	4	9
	I don't think	15	24	39
	Never	15	18	33
	Missing	1	1	2
Total		37	48	85
Did you feel any color changes in your teeth?	Yes, Of Course	6	10	16
	I think that	19	19	38
	I don't think	9	10	19
	Never	2	7	9
	Missing	1	2	3
Total		37	48	85
Did you feel any change in voice intonation?	Yes, Of Course	3	8	11
	I think that	7	9	16
	I don't think	8	11	19
	Never	17	16	33
	Missing	2	4	6
Total		37	48	85
Did you feel that orthodontic treatment improve your food eating?	Yes, Of Course	13	15	28
	I think that	16	15	31
	I don't think	4	10	14
	Never	2	6	8
	Missing	2	2	4
Total		37	48	85

Table-9: Complications of orthodontic treatment

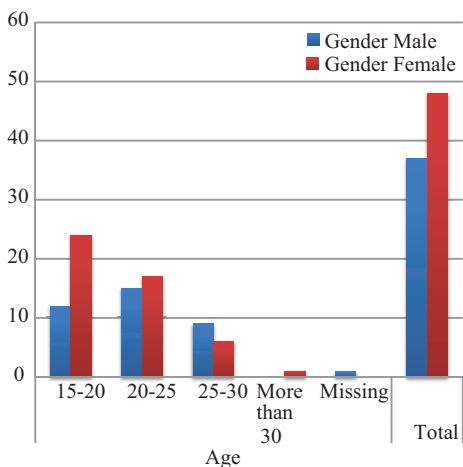


Figure-1: Age Range of Respondents

tations of orthodontic treatment among males differed from those among females.²⁰ The present study found that the “gender factor” to be different only in the level of satisfaction

in regard to smile appearance after treatment while the other factor has shown almost the same result as it has no significant effect. One study in British and American community found that from a patient’s perspective, the most important reason in deciding to have an orthodontic treatment was to improve their appearance.²¹ Similarly, 95% of the subjects in the present study stated that their main concern was improving their aesthetic appearance. The literature shows that most individuals who have undergone orthodontic treatment feel that they have benefited from the treatment; even if dramatic changes in facial appearance are not always evident.²² The present study found that a high proportion of patients were satisfied with their final overall profiles. Moreover, improved patient self-confidence together with a more aesthetic facial appearance accounted for the highest level of patient satisfaction. Other studies investigated the issue of TMD in 32 patients during their follow-up after an orthodontic treatment and they found out that 75% of them were asymptomatic.²³ As a result of these findings, they concluded that orthodontic treatment is neither a risk factor for TMD nor does it prevent TMD. In the present study, only 9% of the patients said that they experienced definite pain or clicking in their TMJ region after orthodontic treatment while a majority of them did not state any problem.

Another noticeable finding of the present study was that 70% of patients experienced an improvement in their eating ability after treatment. This rate is almost similar to the 73% improvement in eating ability reported by Zhou et al. in patients who had undergone orthodontic treatment.²⁴ Bos et al. found that patients who had undergone orthodontic treatment had a more positive view of the treatment than those who did not.¹⁸ Birkeland et al. reported that 80% of children would undergo orthodontic treatment again.¹⁶ Similarly, 89% of patients in the present study stated that they are willing to do the treatment again should they be given a chance.

In recent years, there has been growing acceptance among dental professionals that aesthetics and their psycho-social impacts are an important benefit from the treatment.^{25,26} Some patients reported significant improvement in their self-confidence related to their appearance after orthodontic treatment.^{14,27} In the present study, a high percentage (86%) of the subjects stated that orthodontic treatment had a positive influence on their self-confidence levels. Al-Omiri and Alhajja pointed out the importance of psychological assessments of patients undergoing orthodontic treatment and suggested that satisfaction levels could be correlated with personality traits.^{13,28}

Limitations of the study

The researchers experienced a low response rate. Satisfaction measurement was based on subjective evaluation only.

CONCLUSION

Responses to the questionnaire revealed that, in general, patients who undergo orthodontic treatment remained satisfied with their facial aesthetics in the long-term following orthodontic treatment. In addition, there was no evidence of differences in satisfaction ratings between the two gen-

ders, male and female. Therefore, orthodontic treatment has a clear impact in helping improve the psycho-social status of the patient as majority of them reported high improvement in their self-confidence and communication skills. Furthermore, there were no reports from a majority of the respondents related to complications occurring from the treatment.

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