

Treatment demand, patient's self-esteem and main expectation from orthognathic surgery in Saudi patients with dentofacial deformity

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أهداف الدراسة كالتالي: أولاً: تحديد العوامل المؤثرة على رغبة المريض في العلاج الجراحي للتشوهات الوجهية السنية. ثانياً: قياس تأثير التشوهات الوجهية السنية وثقة المريض بنفسه وكذلك النتائج المتوقعة من العملية الجراحية. ثالثاً: تحديد المستوى التعليمي، الجنس، العمر لأفراد العينة. أجريت الدراسة على المرضى السعوديين (١١٥ مريض) المقرر علاجهم بالجراحة التقيومية في كلية طب الأسنان بالرياض، بجامعة الملك سعود. نموذج الاستبانة الخاص بالدراسة. استخدام تحليل سبيرمان (Spearman rho) وكاي المربع (Chi-square) في التحليل الإحصائي للبيانات. أظهرت نتائج الدراسة أن معظم المرضى العزاب في المراحل الجامعية ومعدل أعمارهم ٤/٢١ سنة مع انحراف معياري +٠,٧. تحسين المظهر الجمالي للوجه كان متوقع بعد العملية الجراحية عند ٧٠,٤٪ من أفراد العينة. الانتقاد والتعليق من قبل الآخرين كان السبب الرئيسي في قصد المريض للعلاج الجراحي، وكان له تأثير على ثقة المرضى بأنفسهم. الحث الذاتي الداخلي كان العامل الرئيسي في قبول المريض للتدخل الجراحي، كالي المرضى الذكور والإناث اظهروا نتائج متقاربة جداً من ناحية رغبتهم في العلاج والحث الذاتي لديهم بقبول العلاج الجراحي. المرضى أصحاب التعليم الجامعي وذوي التصنيف الثالث اظهروا رغبة بالعلاج أكثر من غيرهم.

The aims of this study were: first, to determine treatment demand and factors that affect the decision of a Saudi patient with dentofacial deformity to undergo orthognathic surgery; second, to determine patient's self-esteem and main expectation from orthognathic surgery; third, to determine educational level, gender and age distribution in Saudi patients with dentofacial deformity. The study sample included all 115 Saudi patients that were screened and assigned for orthognathic surgery at the College of Dentistry, King Saud University, Riyadh during the period from 1997 to 1999. The collected data of the present sample were obtained from distributed questionnaire. Chi-square test was used for data analysis. Most individuals in the investigated sample were single and at a higher educational level with mean age of 21.4 years \pm 0.7. Improvement of facial appearance was a major expectation from surgical outcome (70.4%). Teasing and criticism from others were the main reasons for seeking treatment, which adversely affected patient self-esteem. Self-motivation was the main factor for patient's decision to undergo orthognathic surgery. Saudi female and male patients showed relatively similar demand and self-motivation for orthognathic surgery. There was positive correlation between high educational level and treatment demand for orthognathic surgery. Furthermore, among the different classification of dentofacial deformity, patients with skeletal Class III expressed higher demand than others.

INTRODUCTION

The face is a major source of vocal and emotional communication, which may have an effect on patient's self-esteem and treatment demand. Improvement of dentofacial appearance has been reported to be a strong motivational factor for many individuals who decide to undergo orthodontic treatment and/or orthognathic surgery. Motivation to seek surgical orthodontic treatment appears to be strongly related to the individuals' perception of the extent to which their dentofacial appearance deviated from socio-cultural norms. There is a strong relationship between appearance and social acceptance.⁷ In addition, educational level, social status,

gender and self-esteem are considered factors, which have effects on patient's demand for orthognathic surgery.¹⁻⁴ Besides esthetics, patients generally seek orthognathic surgery due to other factors such as functional insufficiency, speech problems and TMJ pain.⁵⁻⁹

Proffit *et al.*¹⁰ found that women were twice as likely as men to seek clinical evaluation for dentofacial deformity and more likely to receive surgical treatment once evaluated. Sheats *et al.*¹¹ noted that females demonstrated more concern regarding their dentofacial appearance (35%) than males (19%) which was in agreement with previous studies.^{10, 13-16} Bennet *et al.*¹⁷ reported that patients with severe disharmony expressed greater demand for treatment and their skeletal appearance often have an effect on the quality of their life.

Previous studies showed a significant relationship between self-esteem and the

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degree of dentofacial deformity.¹⁸⁻²³ Meyer *et al.*¹⁸ studied patient's motivation for seeking orthognathic surgery. He found that patients with facial abnormalities looked to surgery as a way of improving not only their appearance, but also their self-esteem and social acceptance. Huntton¹⁹ and Crowell *et al.*²⁰ recognized that patients were more satisfied with the effect of surgery on their self-esteem and appearance rather than with masticatory improvement. However, most of them reported a positive life changes as a result of the surgery. Facial esthetics was the most important physical characteristic feature in the development of high self-esteem, where the individuals who are satisfied with their facial appearance expressed greater self-esteem.²⁰ Giddon²² reported on the importance of orofacial area in successful life communication and interpersonal relations, which is a result of increased patient's self-esteem.

The information with regard to patient's perception and its influence on the decision to undergo orthognathic surgery should add to proper understanding during the planning for surgical correction to a better prediction and patient's satisfaction on the final result. Education, socioeconomic status, gender and self-esteem are factors which may influence a person's perception of facial deformity and demand for orthodontic treatment.^{2,3,4}

The aims of the present study were: first, to determine treatment demand and factors that affect the decision to undergo orthognathic surgery among Saudi patients with dentofacial deformity; second, to determine patient's self-esteem and main expectation from orthognathic surgery; third, to determine educational level, gender and age distribution among Saudi patients with dentofacial deformity.

MATERIALS AND METHODS

The study sample included 115 Saudi patients that were screened and assigned for orthognathic surgery at the College of Dentistry, King Saud University, Riyadh during the period from 1997 to 1999. All patients were adults with no cleft lip and/or cleft palate or severe genetic disturbances.

Every patient was interviewed individually to answer a constructed questionnaire. The first part of the questionnaire contained patients' personal data, which included name, gender, age, social status, educational level and the chief complaint.

The second part of the questionnaire consisted of a set of multiple-choice questions that was used in the assessment of patient's demand, self-esteem, patient's main expectation from surgical outcome and factors that affect patient's decision to undergo orthognathic surgery. Each patient was interviewed individually to answer a constructed questionnaire. The set of multiple choice questions facilitated comparison of answers. The author was available when the questionnaires were being filled to make sure that the patient understood well all the questions and provided the answers objectively.

Each patient was informed that surgical intervention was an essential part of the treatment plan. Then, they were asked to select either to agree or disagree with the surgical approach. For patients who indicated agreement for surgical intervention, the level of their agreement was also determined. This was carried out by requesting the patients to mark the level of agreement on a given ascending scale from one to ten. In order to avoid overestimation of patient's demand and to facilitate its statistical correlation with other variables, patient demand was reclassified into uneven classes (low, moderate and high) demand

according to the following scores: 1-5, 6-8 and 9-10, respectively.

STATISTICAL ANALYSIS

The data obtained were analyzed using Statistical Package for Social Sciences (SPSS) software program and presented in the form of tables and figures. Descriptive statistics were calculated for all variables. Chi-square test was used to determine the significant relationship between different variables. The significant level was set at $P < 0.05$.

RESULTS

Out of 115 cases, 67 (58.3%) were males and 107 (92.2%) cases were not married. The age-range of the investigated patients were from 17 to 35 years with a mean of 21.4 ± 0.7 years. The majority of the patients (54%) were in the age-range of 17-20 years (Fig. 1). Fifty-seven percent of the patients had university education while only 2.6% had primary school education. Half of the patients were concerned mainly about their skeletal appearance whereas 25.2% were concerned with their dental appearance (Table 1).

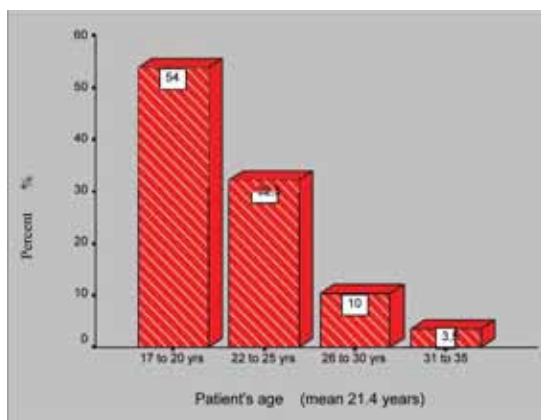


Fig. 1. Frequency distribution of patients' age in the present sample (Mean=21.4 years, n=115).

Table 1. Chief complaint of the patients

Chief complaint	Frequency	Percent (%)
Skeletal appearance	57	49,6
Dental appearance	29	25,2
Speech problem	10	8,7
Masticatory problem	13	11,3
TMJ pain	6	5,2
Total	115	100

Improvement of patient's self-esteem after correction of facial defect was expected by 76.5% of the patients while 66.1% of the patients used to suffer from criticism regarding their facial appearance by friends and relatives. On the other hand, 27.8% of the patients' dentofacial appearance made them reserved (Table 2).

Table 2. Assessment of patient self-esteem in the present sample (n=115)

Questions	Yes (%)	No(%)
1. Does your dentofacial appearance make you more reserved?	27.8 Sometimes (32.2)	40.0
2. Do you think correction of your dentofacial defect will improve your self-esteem?	76.5	23.5
3. Do you experience teasing or criticism because of your dentofacial appearance?	66.1	33.9

Self-motivation was found to be the main factor (55%) for patient's decision to undergo orthognathic surgery. Dental professional motivation was the second factor that affected patient's decision to accept orthognathic surgery (26.1%) and about two-thirds (63.5%) of the patients indicated high treatment demand (Table 3).

A major improvement of facial esthetics as a result of surgical correction was expected by 70.4% of the patients whereas improvement of mastication was expected by 12.2% (Table 4).

Table 3. Patient's treatment demand and self motivation

Motivation	Treatment demand			Total
	High	Moderate	Low	
Parents	5 (33.3)	7 (46.7)	3 (20.0)	15 (13.0)
Self	54 (84.4)	9 (14.1)	1 (1.6)	64 (55.7)
Friends	1 (16.7)	2 (33.3)	3 (50.0)	6 (5.2)
Dentist	13 (43.3)	12 (40.0)	5 (16.7)	30 (26.1)
Total	73 (63.5)	30 (26.1)	12 (10.4)	115

Table 4. Patient's main expectation from orthognathic surgery

Expectation	Frequency	Percent (%)
Esthetic improvements	81	70.4
Speech improvement	13	11.3
Reduce TMJ pain	7	6.1
Masticatory improvement	14	12.2
Total	115	100

A significant relationship was found between patient's treatment demand and self-motivation ($P < 0.05$) as shown in Table 3. Patients in the high educational level reflected higher demand than others (Fig. 2). The Saudi female and male patients showed relatively similar treatment demand and self motivation for orthognathic surgery (Fig. 3). In addition, skeletal Class III patients expressed higher demand (49.1%) than Class II (43.8%) and Class I facial deformity (6.8%) as shown in Figure 4.

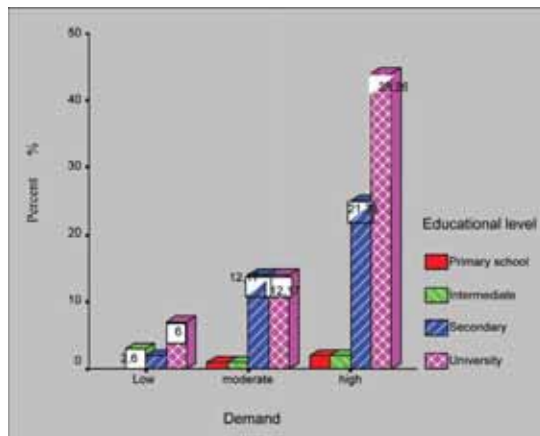


Fig. 2. Patient's demand versus educational level in Saudi patients with dentofacial deformity (n=115).

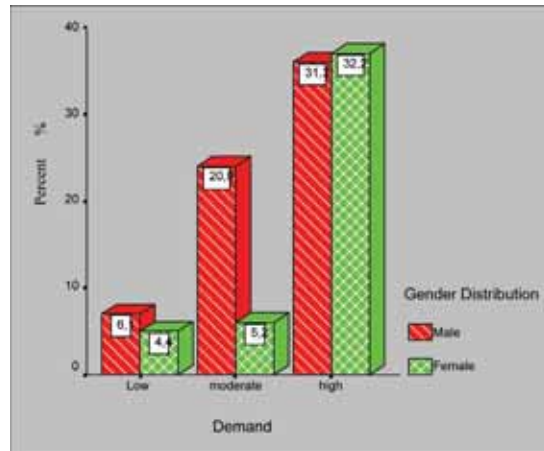


Fig. 3. Patient's demand versus gender distribution in the present sample (n=115).

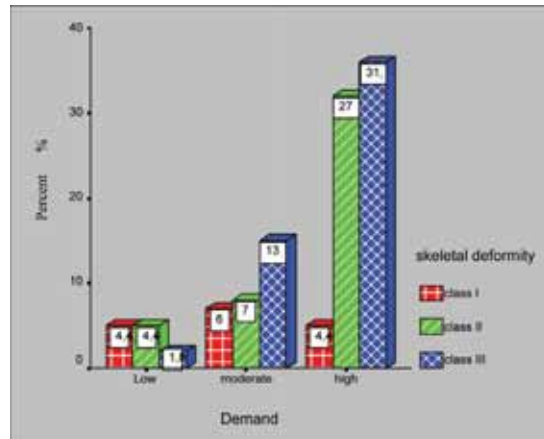


Fig. 4. Patient's demand versus skeletal deformity (n=115).

DISCUSSION

Cleft lip and palate patients or others with severe genetic skeletal disturbances were not involved in the present sample because their treatment strategies are different. Treatment strategies for patients with syndromes such as Down's syndrome are different from those of ordinary orthognathic patients. Patients with syndromes are usually exposed to surgery at a much younger age in order to prevent social rejection by family members, peers and to promote development of higher social acceptance and self-esteem.²⁴⁻²⁶

An extensive review of the literature from 1960 to 1999 indicated that there was precise index introduced to measure patient's demand for orthognathic surgery. Therefore, the present investigation was designed to include certain questions that reflected patient's agreement regarding surgical approach and the level of this agreement was graded from one to ten.

Complaint from facial appearance was expressed by 49.6% of the patients. This indicated to a large extent that dentofacial appearance was a major concern of most Saudi patients demanding orthognathic surgery. Previous studies showed that dentofacial appearance was the major concern of the patients who sought surgical-orthodontic treatment. They reported a relationship between the dentofacial appearance and social acceptance.^{21,22,27} In the present study, facial appearance was considered the most important physical characteristic feature in the developing of facial self-satisfaction by the Saudi patients.

A total of 63.5% of the patients had shown high demand for surgical treatment. This could be explained by the severity of facial deformity and the concentration of most patients on the improvement of their facial appearance. Patients with a higher educational level expressed a higher demand for treatment. This most likely indicated that patient's awareness was influenced by educational level, which was reflected through high concern regarding their dentofacial appearance than others. This was confirmed by the significant correlation between patient's demand, self-perception and educational level ($P < 0.05$).

A significant correlation was also found between patient's demand and self-motivation ($P < 0.05$). This result is in agreement with Kiyak *et al.*²⁸ It most likely indicated that the lack of self-satisfaction regarding dentofacial appearance played a significant role in patient's demand for

orthognathic surgery which may have an effect on patient's self-esteem.

The treatment demand was slightly lower among male patients compared to female patients. This is in agreement with Balkhi and Zahrani,²⁹ and Kawari³⁰ results in a similar ethnic group. This might mean that esthetic improvement was considered as a major reason for women to undergo orthognathic surgery. This was supported by the significant correlation between female patients and self motivation ($P < 0.05$). However, the result of previous studies indicated that females in other ethnic groups showed greater demand for orthognathic surgery compared to the present study.^{8, 31-33} This may be due to two possible reasons; first, females in other ethnic groups may have better knowledge regarding orthognathic surgery. Secondly, social condition and cultural background might play a role in limiting treatment demand by the Saudi female to perform orthognathic surgery.

Patients with Class II skeletal deformity showed lower demand (43.8%) than patients with Class III skeletal deformity (49.1%). This result is consistent with that of Proffit *et al.*¹⁰ There are two possible reasons for this lower demand of skeletal Class II compared to skeletal Class III. First, patients with skeletal Class II may be more socially acceptable than those with Class III. Secondly, skeletal Class II patients can hide their skeletal defect either by forward posturing of the mandible (Sunday bite) or the male patients can camouflage their deformity by growing beards.

In this study, 66.1% of the patients were suffering from criticism regarding their dentofacial appearance by friends and relatives. According to Helm *et al.*²³ such continuous criticism often has an adverse effect on patient's self-esteem. This suggests that psychosocial pressure such as teasing or criticism would increase patient demand for orthognathic surgery.

Further, Bell *et al.*³⁴ found that patient's decision to undergo orthognathic surgery was due to psychological factors rather than morphological characteristics. Kiyak *et al.*⁷ reported same finding.

In the present study, dentofacial appearance was considered a major factor, which affected the patient's self-esteem (76.5%). This finding confirmed that dentofacial appearance is a major concern for patient's satisfaction. This is because others often judge the patient for his/her dentofacial appearance. Furthermore, accepted facial appearance by the society plays an important role in the development of an individual's self-concept and self-esteem. This is in agreement with Meyer¹⁸ and Crowell *et al.*²⁰ reports.

The improvement of facial esthetics following surgical correction was expected by 70.4% of the patients in the present sample. This clearly indicates that the main reason for seeking orthognathic surgery was the improvement of facial esthetics, which coincided well with patient's chief complaint. This is in agreement with the findings obtained by Wictorin *et al.*,⁵ Jacobson,⁶ Kiyak *et al.*,³⁵ Mohlin⁸ and Flanary *et al.*⁹

CONCLUSIONS

1. Most of Saudi patients demanding orthognathic surgery were single. They had higher education with the age range of 17 to 20 years.
2. The improvement of facial appearance was the main expectation of most Saudi patients demanding orthognathic surgery.
3. Teasing and criticism from friends and relatives were the main reasons, which adversely affected the patient's self-esteem.
4. Self-motivation was the main factor for patient's decision to undergo

orthognathic surgery (55.7%) followed by motivation from the dentists, parents and friends.

5. The Saudi females showed slightly higher demand and self-motivation for orthognathic surgery than males.
6. The patients with skeletal class III expressed higher demand than others.

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