

Why Jordanians Seek Orthodontic Treatment? Demand and Real Need

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ABSTRACT

Objectives: Patients seek orthodontic treatment mainly due to psychological reasons, to improve their own dental appearance and aesthetic picture. The purpose of the present study was to determine factors associated with demand for orthodontic treatment and how this relates to real treatment need in a sample of Jordanian patients.

Methods: This descriptive study involved 427 internally motivated patients aged 15 years and above who sought Orthodontic treatment at two Royal Medical Services Dental Clinics. Dental health component grade of index of orthodontic treatment need along with patient's chief concerns were recorded, according to these concerns five groups were obtained.

Results: Among patients who were seeking treatment only 36% showed a definite need (grades 4 and 5 by orthodontic treatment need) for orthodontic treatment. The desire to have a better dental appearance at the anterior dental area was the main reason (61%). Other factors that influenced patients in seeking orthodontic treatment were to treat functional impairments (14%), profile and extraoral concerns (6%), and smile related reasons (4%). A remaining 15% attributed their desires to rather unusual reasons.

Conclusion: Demand for orthodontic treatment outweighs the real subjective need, Royal Medical Services should adopt a standardized index to prioritize patients need and plan resources accordingly. Upper and lower dental crowding and/or malalignment was considered a main factor in seeking orthodontic treatment, and finally health and dental care workers have duty for educating and raising the public dental awareness.

Key words: Demand, desire for orthodontic treatment, seeking care, index of orthodontic treatment need (IOTN).

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Introduction

The goals of orthodontic treatment are to restore esthetic impairments, improve oral health and function, and enhance patient's psychosocial well being as an active member of a population along with addressing parents concerns^(1,2) Patients who seek orthodontic treatment are without doubt concerned with improving their appearance and smile as well as social

acceptance in a population.^(2,3) The contemporary scope of orthodontics stretched out to include dentofacial orthopedics and more extraoral structures.^(2,3) Demand or expressed need is where a patient's desire is converted into an action.⁽⁴⁾ A mixture of social, psychological, and personal factors influence the self-perception of a person's dental appearance and demand for orthodontic treatment.⁽⁴⁻⁶⁾ Understanding the

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factors involved in the demand for orthodontic treatment in a particular population enables better planning of human and financial resources as well as a better assessment of treatment needs and priorities for both patients and parents especially at publicly funded orthodontic treatment coverage plans⁽⁶⁻⁸⁾ as the Royal Medical Services (RMS) orthodontic clinics.

Malocclusion can be considered a public health concern due to its high prevalence and the prevention/interception methods involved, along with the impact of dentofacial esthetics hold on quality of life.^(8,9) The World Health Organization (WHO) considered malocclusion the third highest oral health priority.⁽¹⁰⁾

In Jordan, the reported need by Abu Alhaija *et al.* was 34% and by Hamdan was 28%. The definite need for orthodontic treatment among Jordanians aged between 12-14 and 14-17 revealed that the majority of scientific research used objective and normative assessments done by professionals based on an Index of Orthodontic Treatment Need (IOTN)^(11,12) which proved to be a quick and reliable indicator when used to assess treatment need at a community and is gaining acceptance worldwide.⁽¹³⁾ Whereas subjective perception of patients and their desire to seek treatment is usually ignored. Further, the perception of the examining orthodontist and patient does not always coincide⁽¹⁴⁾ and this is supported by several studies worldwide where the demand for treatment is always higher than the actual need or the service provided at public clinics⁽¹⁴⁻¹⁶⁾ which definitely affects service's level and provision as a whole.

The aim of the present study was to determine factors associated with the desire for seeking orthodontic treatment among an internally motivated sample of Jordanian patients above 15 years old who were about to embark orthodontic treatment at a publicly funded clinic, and whether this demand relates to the real treatment need.

Methods

A total of 427 (186 males, 241 females) aged above 15 years were selected among 940 patients who attended Orthodontic Clinics at Prince Rashed and Prince Ali Military Hospitals in Irbid and Karak respectively, during the

period of March to June 2011. Only patients who showed real internal motivation and had no previous treatment experience were selected. Occlusion of these patients was assessed using the Dental Health Component (DHC) of IOTN (Brook and Shaw, 1989). The outcome variable desire for orthodontic treatment was assessed verbally by asking 'why do you think you need orthodontic treatment?' and no parental inputs were taken into account.

Patients were interviewed personally and examined according to IOTN by the first author who was trained in its use. To assure reproducibility, 25 patients were reexamined two weeks after their initial examination, Kappa value for DHC was 0.78 showing good agreement. Based on patients reasons, we classified patients into five groups; dentofacial profile group (G1), anterior dental area group (G2), functional concerns group (G3), smile and smile related reasons group (G4) and the other reasons group (G5). Skeletal reasons and/or concerns as protruding maxillary or mandibular bone, prominent chin or any facial disharmony/asymmetry issues were as allocated into G1. Anterior dental "esthetic" area comprising of the upper and lower frontal segments, for example, where patients mentioned anterior crowding or spacing along with ectopic canine positions, also protruded teeth or segments as increased over jet or large central incisors all these were placed among G2, usually expressed as 'I want to have straight teeth'. Patients with functional concerns such as mentioning reasons as 'I cannot bite or chew well', speech or swallowing related factors were allocated to G3. Patients who mentioned smile or smile related reasons when asked about their desire for seeking orthodontic treatment were allocated to G4. G5 contained the other uncommon concerns, as for example 'I have stains on my teeth', 'I want to have braces as my classmates do', and 'my teeth hurt', and so on. Data from the calculated need for orthodontic treatment was gathered upon patient clinical examination by IOTN, and data from patients concern groups G1 – G5 reflecting the reasons behind their desire to have treatment, were all analyzed using frequencies.

Table I: Distribution of patients G2 with frontal dental concerns (n= 260 with 61%)

Patient's exam findings	Number	%
Moderate and severe crowding	93	36
Spacing and missing teeth	87	33
Overjet	57	22
Diastema and AOB*	19	7

*Anterior Open Bite

Table II: Distribution of patients with G3 functional concerns (n=61 with 14%)

Patient's concern	Number	%
Speech, Chewing	13	21
Biting 'clenching'	38	62
Swallowing	2	3
Mouth breathing	8	13

Table III: Distribution of patients with G1 profile/extraoral concerns (n=25 with 6%)

Patient's concern	Number	%
Maxilla	6	24
Chin	14	56
Nose	2	8
Asymmetry	3	12

Results

Only 36% (n=154) showed definite need for orthodontic treatment according to IOTN (grades 4 and 5). Twenty four per cent (n=101) were in border line need grade 3, and the remaining 40% (n=172) had minor severity with grades 1 or 2 with no need for treatment as per IOTN. Concerning demand, approximately two-thirds 61% (n=260) of patients sought orthodontic treatment for factors attributed to restoring their anterior dental "esthetic" area with a desire to attain straight teeth as a frequent reason (Table I). A decent portion 14% (n=61) of patients claimed that they desired orthodontic treatment for functional reasons, mainly 'my bite feels wrong when I bite' (Table II). The results of this descriptive study also showed that a few participants appreciated the role of orthodontics in their smile making and improvement with about 4% (n=19). Only female patients mentioned smile or smile related concerns as their driving reason for seeking orthodontic treatment. Furthermore, less than 6% (n=25) of patients desired treatment for addressing their facial characteristics and profile issues. (See

Table III) Patients also attributed their desire for seeking orthodontic treatment for reasons not related to the orthodontic field and/or not commonly treated in orthodontic clinics were approximately 15% of the study participants.

Discussion

In Jordan, where orthodontic treatment is regularly provided by public services, updated data on the need and demand for orthodontic treatment among children and adolescents is necessary for planning such a service. Several studies have found that demand for treatment is higher than the actual need itself.⁽¹⁴⁻¹⁶⁾ In one study, only half of the patients who desired orthodontic treatment from Northern Jordan schools by Abu Alhaja *et al.* were really in definite need for orthodontic treatment. Also this demand is highly influenced by parent's opinions and perceptions regarding child's appearance.⁽¹⁵⁻¹⁷⁾ Another study showed this demand greater than that expressed by their children.⁽¹⁸⁾

This present study did not assess any parent concern or gender differences, only patients aged above 15 years and motivated enough to express their desires were selected. In public hospitals orthodontic treatment is carried out almost free of charge eliminating the financial constrains component which may affect this nearly elective choice for patients and parents.⁽¹⁸⁻²⁰⁾ The way dental corps organize clinics to work as one department with specialty clinics accessible to all patients after a general dentist clinic visit, allowed for nearly true representation of those factors behind seeking orthodontic treatment in this descriptive study.

Using a standardized globally accepted index as IOTN on a sample of 427 patients, identified 36% in definite need for orthodontic treatment. However, these would not necessarily be given priority in treatment because the decision is operator dependent and usually biased if no guidelines or standard assessment criteria is followed. Most public service providers adopt a standardized index, which surely aids to identify patients with actual need and treatment priority, and plan resources accordingly, this will definitely raise standards of dental care and assure provision of service to whom in need. In RMS no standardized protocol is adopted yet to classify patients according to their needs,

therefore it is based on a first come first served basis.

The result of the present study revealed that the majority (61%) of our sample held a desire for restoring their frontal dental appearance, confirmed by intraoral examination, such as dental displacements "crowding" or spacing along with increased protrusion and large central incisors teeth. Our findings agree with various studies worldwide and in Jordan⁽¹¹⁻¹²⁾ which report severe tooth displacements i.e. crowding followed by increased overjet, advocating psychological reasons of aesthetics and appearance as the main factors behind seeking orthodontic treatment.

The statement 'I want straight teeth' was repeated by nearly 90% of those with frontal dental concerns group. Smile concerns G4 dominated by females only 19 shows how minor this issue is addressed in this Jordanian sample, in contrast to many studies, where an esthetically pleasing smile often is the primary reason for seeking orthodontic care for both sexes. This suggests that Jordanian adolescents are more tolerant to the aesthetic effects of their smiles than Western adolescents.⁽¹⁹⁻²⁹⁾ Furthermore, the lower number of females touching this subject might be justified by social and cultural influences in this Jordanian sample studied, which might affect the reasons and desires for patients and this female dominated demand, as multiple studies had showed variables as gender is found to have a statistically significant differences when linked with the desire for orthodontic treatment⁽¹⁹⁻²³⁾ where females are found to be more critical and concerned when it comes to smile and dentofacial appearance. The results attained for functional concerns G3 with 14% of patients seeking treatment for reasons such as I can't bite or chew well, or for speech alterations (Table II) suggests that esthetics and appearance ranks always first, and we are judged by appearance and social status.^(19,21-29) In contrast to an Australian study which found that functional aspects as difficulty in chewing or speaking were more important than aesthetic aspects as crowding in the determination of the importance of orthodontic treatment.⁽²⁰⁾ Actually, it's quite natural for humans to consider dentofacial esthetics not function as the main determinant factor in the demand for orthodontic

treatment as this study and most studies did prove. Nevertheless, some patients (n=34) mentioned reasons as toothache or teeth staining as their desire for seeking orthodontic treatment, showing the lack of patient education and awareness about the treatment in whole and what is involved in it. Thus, this requires from health care workers to educate and raise patient awareness in the dental and orthodontic field and its indications and also limitations.

Conclusion

Public services should adopt a standardized protocol for providing dental orthodontic treatment for patients who seek treatment, as demand is higher than actual need and consequently this could consume its financial and human resources. Patients seek orthodontic treatment mainly due to psychological reasons, which is to improve their own dental appearance and aesthetic picture. Upper and lower crowding and/or malalignment were considered main factors in seeking orthodontic treatment and care in publically funded clinics. Perceived needs of an orthodontic patient should also be taken into consideration before commencing orthodontic treatment to increase chances of mutually satisfying results for both the orthodontist and patient, and finally health care workers have a duty of education and raising public dental awareness.

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